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TOOL REVIEW
DETAIL SANDERS

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THE WORLD'S LEADING WOODWORKING MAGAZINE

NOVEMBER 1994 • ISSUE NO. 74

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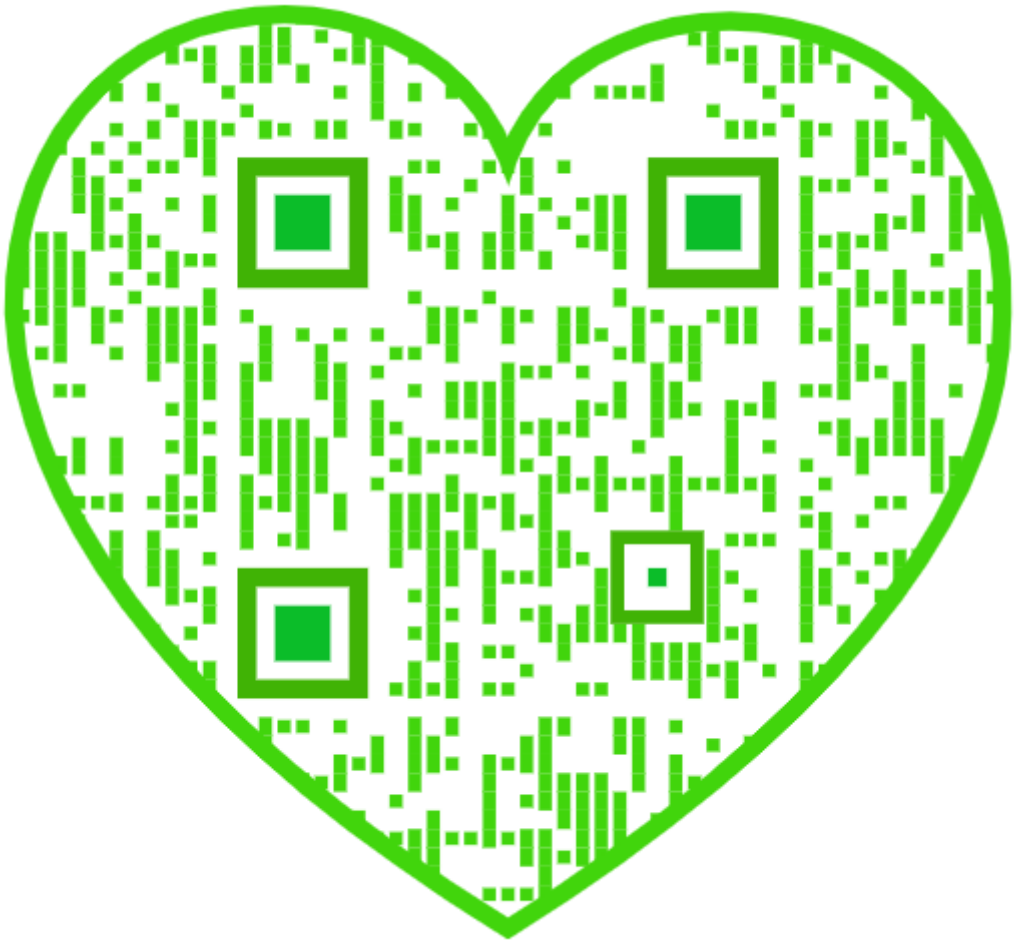

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THE EDITOR'S ANGLE

NEW FOR YOU

Talk about value!

FULL-SIZED PATTERNS

Art Director Lee Gatzke shows other *WOOD*® magazine staffers how the new *WOOD PATTERNS*™ insert will go together.

I'm sure that by now you've noticed the cosmetic changes we've made to *WOOD* magazine recently. In September we unveiled our new cover design, a redesigned contents page, and a new treatment for some of the departments in the magazine's front end. While these changes hopefully will make for an even better designed publication, they pale by comparison to what we're adding starting with this issue.

For a long time, we have wanted to include full-sized patterns for our larger-scale projects as a convenience to you. We finally found a way do it! Binding *WOOD PATTERNS* into the center of the magazine represents a large investment for us, but one we feel will work to your advantage as well as ours. Here's why.

No longer will you have to work with confusing gridded drawings, or send in for full-sized patterns. All the information you need to build a project will be in the magazine as it arrives at your door.

Photograph: John Hetherington

Having the *WOOD PATTERNS* insert in the magazine will allow us to present you with some design alternatives to some of the projects. Say, for example, you see a nightstand project in *WOOD* magazine, and you like everything except the style of the piece. Now, we may include a style option or two on the insert that may better fit your taste or home's decor. With the inclusion of *WOOD PATTERNS*, we'll also have extra space in our project write-ups for more and/or larger how-to photos and illustrations.

We're excited about adding this new dimension to the woodworking information we already provide to you. But after all, you're worth it, right? We think so.

By the way, if you decide to remove the insert from your magazines, we've designed the cover sheet so you can store the patterns away and access the information when you need it.

Larry Clayton

Print this article

Better Homes and Gardens®
WOOD®
THE WORLD'S LEADING WOODWORKING MAGAZINE

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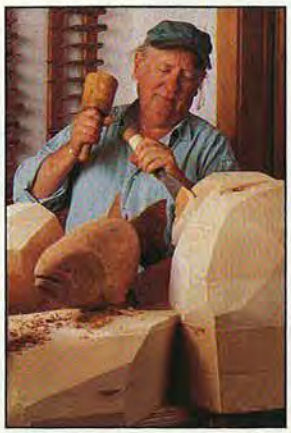

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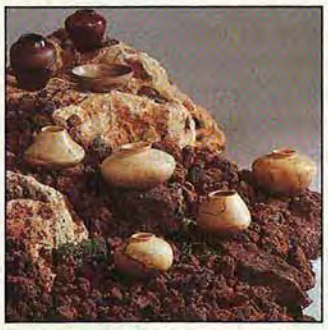

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This issue's cover wood grain: Bird's-eye white ash

Caution: This lathe could be habit forming.

Turn stock 36" between centers, 12" over the cast iron bed or swivel the headstock 90° for outboard turning of work up to 16" diameter. Variable speed (500-2000 rpm) allows proper control for out-of-round and offset turning or roughing of green or seasoned wood through final finishing stages.

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TALKING BACK

We welcome comments, criticisms, suggestions, and even compliments. Send your correspondence to: Talking Back, *Better Homes and Gardens® WOOD®* Magazine, 1912 Grand Ave., Des Moines, IA 50309-3379.

A great way to approach tool storage

I was pleased to see your announcement of IDEA SHOP™2, designed as a garage workshop, that appeared in the September 1994 issue. Like many of your other readers, I have my workshop in my garage, a 19×20' space that also serves as the main entrance to our house. To maintain domestic tranquillity, my wife and I have established two rules for the workshop/garage: Both cars must be in the garage every night (my rule), and Martha's car must be outside whenever I use a sander (her rule).

Because of these rules, the limited space, and my need to keep the shop clean and tools easy to find, I have prioritized my tool storage into the following categories:

1 *Immediately Available.* This includes anything I want to be able to get at or use, even with both cars in the garage. These items get prime wall or bench space, and include the drill press, bandsaw, hammer, grinder, and sharpening stones.

2 *Easily Available.* These tools become available by just moving a car out and sliding the tools into position. They include the radial-arm saw, the tablesaw, and other occasionally used tools such as large clamps and a palm sander.

3 *In-Shop Storage.* This includes the router table, the scrollsaw, and any other tools that can be moved into place and attached to the workbench. I store these tools under the workbench, on shelves, and in other easy-to-get-to areas.

4 *Deep Storage.* These tools don't get used much, and include masonry and plumbing tools. I place these to the back of the shelves, and sometimes in the attic or closet.

Even with this prioritization system working for me, I still haven't found a good way of storing wood. It seems that just when I get all the tools organized, I'm offered fine wood at a price too good to resist! Hmmm. Maybe I can build a storage rack to fit the space above the garage door.

—Bob Moroch, Dallas

Good points, Bob. Many woodworkers have a problem with wood storage, even in a shop designed exclusively for woodworking. If any of you have a new, space-saving idea for wood storage, please send it to us. We'll be happy to share it with other WOOD *magazine readers in a future issue.*

Woodworkers can help teachers, too

The "Finishing Touches" column in the December 1993 issue mentioned working with the physically and mentally challenged. I have worked with such students for almost 20 years, and have made many devices from wood to help them become more independent and successful. There are lots of teachers across the country who have the ideas to help these students learn, but lack the tools and expertise to build this special furniture.

If anyone is interested in helping the handicapped, they should contact their local school district and speak with a teacher of the handicapped or a physical therapist. Woodworker's services will be appreciated greatly.

—Charlene Young, North Liberty, Iowa

A hot solution for transferring patterns

I enjoyed your article "What Woodworkers Need to Know About Transferring Patterns" in the February 1994 issue. I use another simple method that other woodworkers may find convenient.

I transfer patterns by placing a photocopy of the pattern (printed side down) against a piece of wood and ironing the photocopy with a hot iron. This reverses the pattern, so it won't work for lettering. However, I have used this method for many of my chip-carving projects.

—Mark Stryker, Jersey Shore, Pa.

Powermatic update

In our review of oscillating spindle sanders in the September 1994 issue, the Powermatic 14 was downgraded for poor machining of its tabletop and spindle shaft. At the time, a Powermatic official said that these problems would be corrected on newer models. We recently had a chance to review one of these current models, and we're happy to report that our Powermatic contact was true to his word.

The new machine had a smooth top that was no more than .007" out of flat—well within acceptable limits. All of the sanding-drum shafts mated well with the threads on the spindle shaft, with no noticeable runout. In light of these improvements, we recommend the Powermatic 14 (about $300) for those of you looking for something priced in between these highly rated models in our review: the Ryobi OSS450 (about $180) and Clayton 140 or 146 ($625 or $675).

—Bill Krier, Assistant Managing Editor

Continued on page 6

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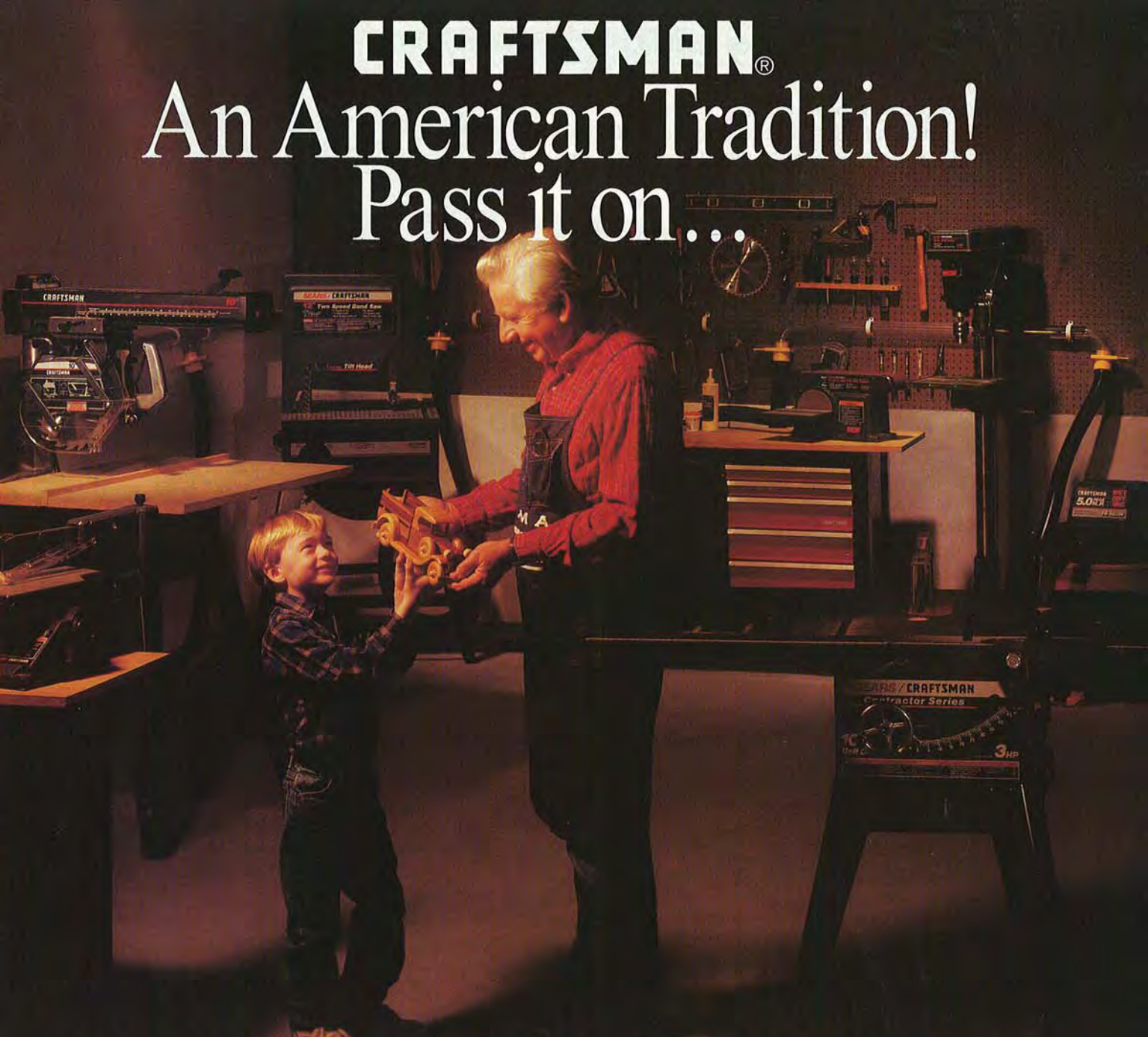

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TALKING BACK

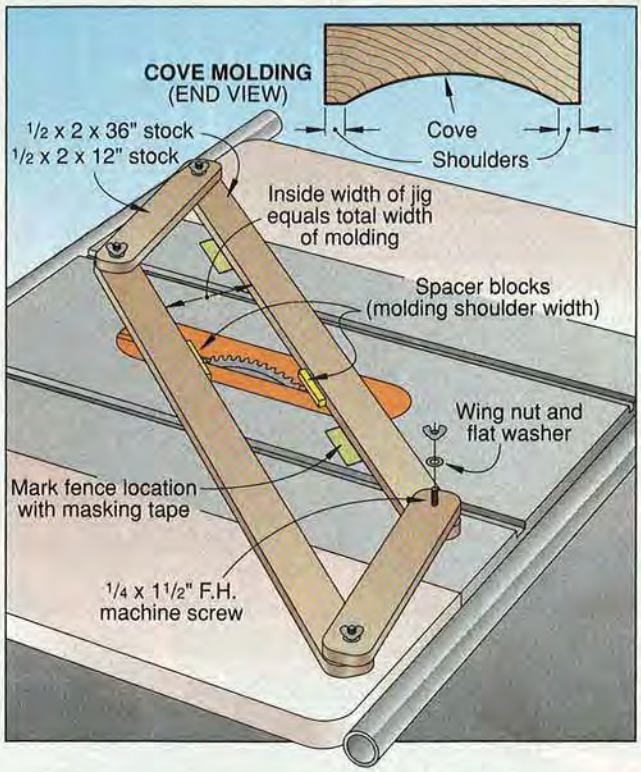
Continued from page 4

A new angle on cove-cutting

A "Talking Back" article on cutting cove moldings from the September 1993 issue mentioned the difficulty of setting the fence on a tablesaw with an eccentric arm, where the center of the saw blade moves forward as the blade raises. The adjustable-parallelogram jig shown in the drawing *right* allows me to quickly set the fence for cutting coves with this type of saw.

To use this jig, first determine the depth of the cove and set the blade to that height. Then, set the inside width of the jig equal to the total width of the molding. Cut two spacer blocks equal to the width of the flat shoulders of the molding, and place these blocks at the points where the front and back of the sawblade emerges from the table. Place the parallelogram jig over the sawblade, and move it until its sides rest against the spacer blocks. Mark this fence location with masking-tape markers on the tablesaw top at two points along the inside edge of the jig. Remove the jig, align the fence to the edges of the masking-tape markers, and clamp it in place. Remember to lower the sawblade to ⅛" above the table for the first molding cut.

—Jim Armstrong, Keizer, Ore.


COVE MOLDING
(END VIEW)
Cove
Shoulders
½ x 2 x 36" stock
½ x 2 x 12" stock
Inside width of jig equals total width of molding
Spacer blocks (molding shoulder width)
Wing nut and flat washer
Mark fence location with masking tape
¼ x 1½" F.H. machine screw

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Here's one dinosaur that you'll love to pieces

I cut out the *"Dino the Dinosaur"* puzzle from *Better Homes and Gardens® Sensational Gifts,* and the joints were loose. I then painted the puzzle with a water-based acrylic paint, and I had a major problem getting the puzzle back together. Is this normal for painted items?

—George Clark, Starkville, Miss.

We used a #9 blade for cutting out the puzzle, George, changing to a #6 blade for the tight cuts. We also asked Rick Hutcheson, WOOD® magazine's scrollsaw consultant, for his advice. Rick made the same recommendations, saying: "A #9 blade will cut a kerf wide enough to compensate for the addition of a thin coat of paint."

We used aniline dye stains to color the puzzle and to eliminate the buildup of paint on the puzzle edges. If you prefer to use paint, apply thin coats to the edges of the pieces, removing any runs or thick areas of paint with a brush. For those of you readers who would like to order a personal copy of Sensational Gifts, *send $6.95 per copy (plus your home address) to:*

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"Bonsai Tree" of Sierra Evergreen and Garnet by Stan Graves

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DUPONT

HOLLOW AUGERS:
THEY HELPED KEEP AMERICA ROLLING

The wooden hollow auger, no. 1, cuts one tenon size. Adjustable types shown include: Bonney, 1870, no. 2; Cushman, 1870, no. 3; Wood, 1875, no. 4; Stearns, 1877, no. 5; Wood, 1900, no. 6 (Wood patented five types of hollow augers); Stearns, 1878, no. 7 (Stearns held patents for seven hollow-auger designs).

In the 19th century, America was on the move. Commerce, industry, and agriculture, fueled by the young nation's growth and westward expansion, rolled ceaselessly onward, carried by countless wooden wheels.

Wheelwrights were riding high then, building spoked wooden wheels for everything from army artillery to Park Avenue hansom cabs. Strong joints were crucial, for, as you'll recall from many a western movie, some of those wheels took terrific abuse.

In particular, a lot of force came to bear at the outer ends of the spokes, where they connected with the felloes, the arc-shaped segments that made up the outer rim of the wheel. (There were normally two spokes for each felloe.) Standard practice called for mating a round tenon on the end of the spoke with a hole bored into the felloe. Craftsmen often formed the tenon with a device somewhat like a plug cutter, a tool known as a *hollow auger.*

Both wooden and iron hollow augers had been in use in America since the time of the Revolution. The wooden one shown *above* (no. 1) is typical of the early, non-adjustable style. Its two steel blades cut a ¾"-diameter tenon.

Then, in 1829, Abel Conant of Pepperville, Massachusetts, received the first United States patent for a hollow auger. For decades after, tinkerers and toolmakers alike buckled down to devising, patenting, and marketing improved devices to cut cylindrical tenons. By December 5, 1911, when the last patent was issued for a hollow auger, 85 styles had been patented.

Made to fit in a bitstock or brace, the devices appealed to chairmakers, laddermakers, and other craftsmen as well as wheelwrights. With a hollow auger, a sturdy joint could be made in two relatively simple operations. And, with a means of cutting the tenons uniformly, parts could be made in a batch rather than being individually hand-fitted.

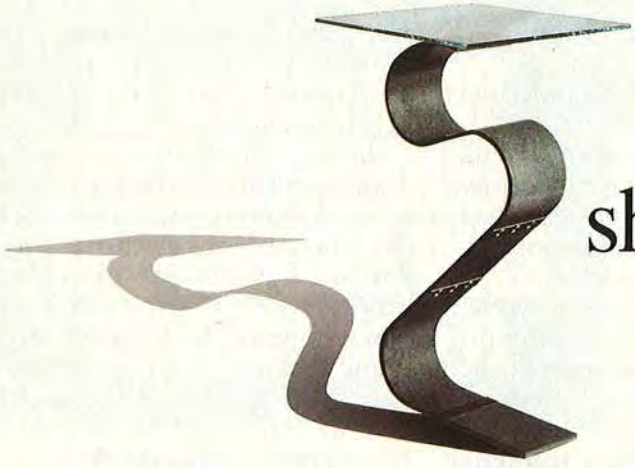
Variations among hollow augers generally involved methods of setting the diameter of the tenon. Some cut fixed standard sizes, others were adjustable. Some models were amazingly complex, verging on the impractical. Those didn't last long in the marketplace.

Hollow augers themselves couldn't survive the decline of wheelwrighting. As steel wheels drove out wooden ones in the years following World War I, demand for hollow augers flagged. Fewer and fewer were available. In the late 1940s, the few remaining models disappeared from the market.

Tools from the collection of
James E. Price, PhD., Naylor, Missouri
Photograph: John Hetherington
Written by Larry Johnston

You can carve it,

polish it, sand it, turn it,



shape it, cut it,

rout it, in fact,

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Corian® also resists nicks and scratches. Not so for you-know-what. And because it's nonporous, stains never stick around. You can even finish Corian® in a number of finishes: from a rich matte to a high-gloss shine. So think of Corian® as your more colorful alternative. Because why confine your woodworking skills only to wood? For more information or to find out where to buy Corian,® call 1-800-4-CORIAN.

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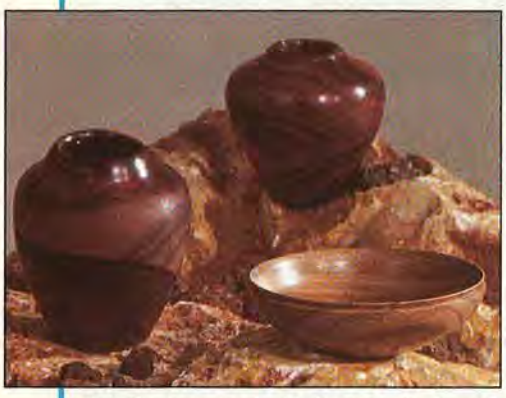
DUPONT

SMALL TOOLS FOR TINY TURNINGS

YOU CAN MAKE THEM YOURSELF

Print this article

When turning miniature vessels such as the small-scale bowls on *pages 52-55*, you often run into situations you just can't handle with regular gouges and scrapers. To reach in through a narrow neck to clean out an interior, for instance, a thin, round-nosed tool with a bend in it would be great. But where do you get such a thing? Well, you could make one.



Small, shop-made tools come in handy for turning small vessels like these .

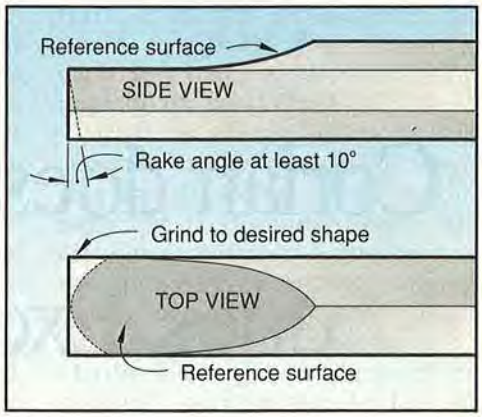
"It's both easy and satisfying to create the tool you need for a particular job," says woodturner John Lea of Mesa, Arizona. All you need are a standard bench grinder and some allen wrenches. "I like allen wrenches because they come in such a range of sizes, they're inexpensive, and they seem to be made of pretty good steel," John sums up.

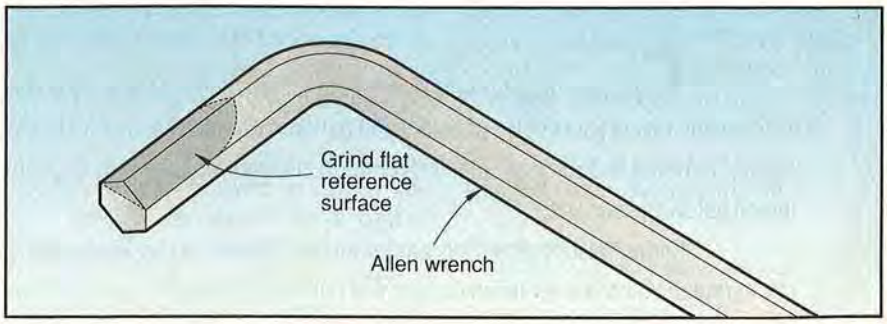
The procedure is simple: Grind a beveled scraper-type end on an allen wrench, forming a profile to meet your needs. (You also could make tools from screwdrivers or dental instruments.) Then, fit the tool with a handle, such as a length of dowel or a turned piece.

"You should consider a few fine points when you grind your own tools," says John, who makes and sells full-sized turning tools as a sideline. Here's his advice:

- Select the largest allen wrench that fits your project. This provides the rigidity and mass needed to dampen vibration. Reduced vibration leads to a smoother cut.
- Start by grinding a reference surface for the cutting edge, where shown *below*. Grind this flat area two or three wrench-diameters long and parallel to the wrench's axis.
- Grind a bevel on the cutting end of at least 10° as shown *right*. This relief, called the rake angle, provides clearance so that the tool doesn't rub when the cutting edge contacts the workpiece. In some cases, say interior work on a small-diameter vessel, you may need a rake angle greater than 10°. But always keep the angle as shallow as possible. "If it's too great," John explains, "the cutting tip will be too thin and will flutter as it cuts, creating ridges and hollows."
- In use, the small tool requires solid support. To keep it from rocking, John grinds the bottom flat where it rides on the tool rest. Support it as close to the cutting edge as possible to minimize vibration, too. "I sometimes modify my tool rest or clamp an extension onto it when necessary to give the small tool the best possible support," John adds.

Illustrations: Kim Downing
Photograph: John Hetherington





BLAZING NEW TRAILS THROUGH THE WOODS WAS NEVER EASIER.

Much of the thrill of woodworking can be found in the exhilarating challenge of a project you've never explored before.

Of course, ideally, the challenge should be to your abilities, *not* your tools. Particularly not your band saw. No tool plays a more critical role throughout a woodland adventure.

Which is why you should make your journey with the Skil HD 3640 band saw.

Its 1/2 hp, 6.0 amp induction motor lets you enter the thickest woods with confidence. The throat capacity is a generous 10" deep. And the cutting height can handle up to 7" of stock.

Putting teeth into these specs is a blade range of 1/2" wide for resawing to 1/8" wide for scrolling.

The HD 3640 has a lightweight, single piece cast aluminum frame that's computer optimized for strength and stability. What's more, its two-wheel blade drive system lowers vibration, improves tracking and helps blades last longer.

And when blade changes *are* needed, the hinged cover swings open 180° for easy access at the flick of its snap-fit latches.

Perhaps the most impressive thing about the HD 3640 is how it packs stationary band saw performance into a 36" high benchtop model. Which, in turn, allows it to be conveniently packed *under* a benchtop when not in use.

So, before embarking on your next woodland adventure, make sure you're properly equipped. Blaze a trail to a store that carries the HD 3640 band saw and the other Skil Woodshop tools. You'll be glad you made the trip.

SKIL WOODSHOP TOOLS

SKIL®

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ASK WOOD

Whether your woodworker's license reads "Beginner," "Intermediate," or "Advanced," you're bound to have a few questions about your favorite hobby. We can help by consulting our staff and outside experts. Send your questions to Ask *WOOD*®, *Better Homes and Gardens*® *WOOD* Magazine, 1912 Grand Ave., Des Moines, IA 50309-3379.

Entertaining the idea of solid wood

I have looked at WOOD *magazine's designs for entertainment centers from the June 1989 and October 1991 issues. These are built from veneered plywood, and I would like to build mine from solid oak or pecan. What are the pros and cons of solid wood versus veneered plywood?*

—Mike Ciesiensky Sr., Ponchatoula, La.

Good question, Mike. We've found that plywood has advantages *and* disadvantages over solid wood in furniture construction. First, the advantages:

1 Plywood panels won't expand, contract, or warp nearly as much as panels made from solid wood. That's because the cross-laminated veneers that make up plywood produce a dimensionally stable sheet of material. In contrast, over a year's time, solid wood panels will expand and contract about ⅛" per foot of panel width in response to seasonal humidity changes.

2 You decrease the amount of work involved in building furniture or cabinets when using plywood. You can cut most cabinet panels from plywood sheets, so you eliminate the job of edge-joining boards to make panels. And, because plywood also comes in several thicknesses, you won't need to use a thickness planer.

3 Plywood provides uniform strength along the length and across the width of the sheet.

4 Premium grades of hardwood-veneered plywood have at least one side made of sequentially sliced or rotary-cut veneers from one log. This provides a uniform appearance in color and grain accross the plywood panel.

However, plywood also has disadvantages when used in furniture construction:

1 Plywood panels require a solid-wood edging or other edge trim for a finished appearance.

2 The thin surface veneers used on plywood make the panels more susceptible to marring and damage. You can easily sand through or gouge the surface veneers, leaving an area of the softwood substrate showing.

3 Solid wood can be more readily bent, shaped, and carved than most plywood.

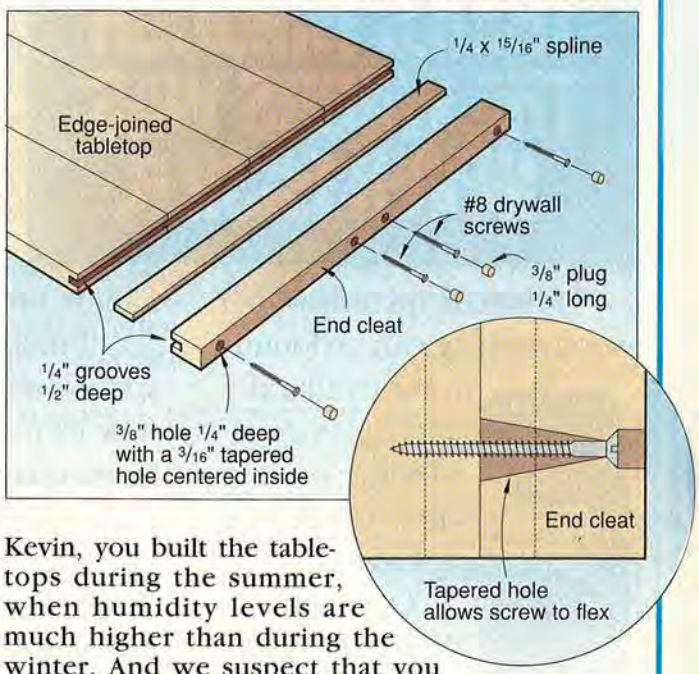
4 You can buy a greater variety of species of solid wood than of veneered plywood.

5 The thickness of plywood varies from manufacturer to manufacturer, and often between lots made by the same company. And to further complicate matters, much of the imported plywood comes in a metric measurement of thickness. You can reduce the amount of thickness variation between sheets of plywood if you buy all the plywood for a project at the same time, and hopefully from the same manufacturer's lot.

Sliding joint prevents cracks

Last August I built a Shaker-style coffee table out of black cherry. I edge-glued boards to form the top panel, and fastened end cleats to stabilize the top. These tops are connected to the frame using metal tabletop fasteners fitted into slots in the rails. During the winter the tops split along a glue line. What can I do to prevent this from happening?

—Kevin Kreider, Akron, Ohio

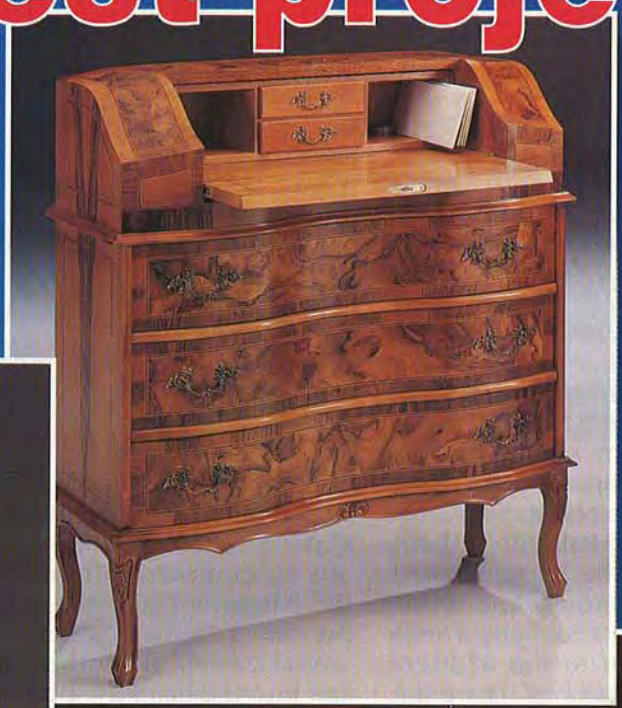

1/4 x 15/16" spline
Edge-joined tabletop
#8 drywall screws
3/8" plug 1/4" long
End cleat
1/4" grooves 1/2" deep
3/8" hole 1/4" deep with a 3/16" tapered hole centered inside
End cleat
Tapered hole allows screw to flex

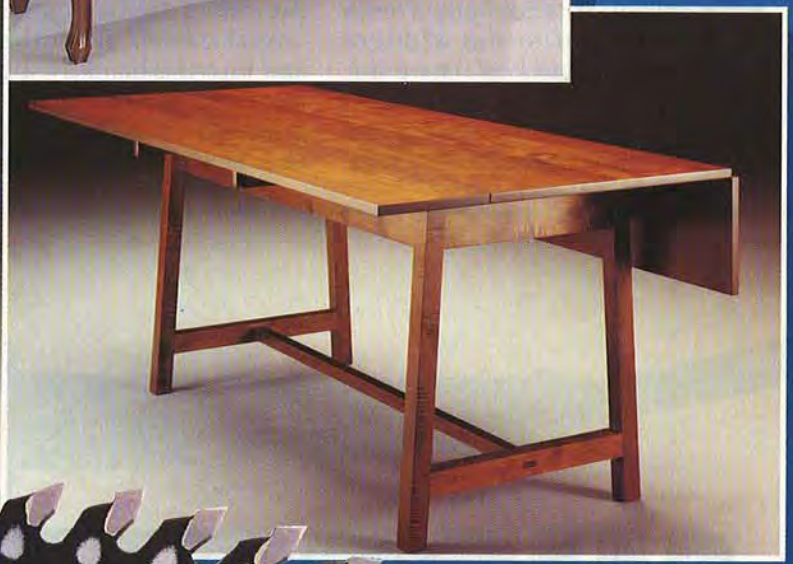
Kevin, you built the tabletops during the summer, when humidity levels are much higher than during the winter. And we suspect that you fastened or glued the end cleats solidly to the tabletops. When the humidity dropped later in the year, these cleats prevented the tops from contracting. As a result, the tabletops cracked to relieve the built-up stress.

To prevent this from happening, fasten end cleats to tabletops with a sliding joint, such as a long tenon, a spline, or a sliding dovetail joint. Glue this sliding joint only in the center of the tabletop. The spline or tenon joints can be reinforced with long screws, placed at the center, and near the outer corners of the end cleat. The outer screws will need to be set in tapered slot or oversize holes to allow the wood to move. When cutting the screw slots, allow for ⅛" of movement for each foot of tabletop width. See the drawing *above* for a joint that works nicely for tables up to 3' in width.

Continued on page 14

Your best projects





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The LU85 is a precision cut-off saw, ideal for your mitre saw or table saw, for the cutting of natural woods, low pressure laminates and mouldings.

SIZE	TEETH	BORE
8"	64	5/8"
9"	72	58"
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12"	96	1"
14"	108	1"
15"	108	1"

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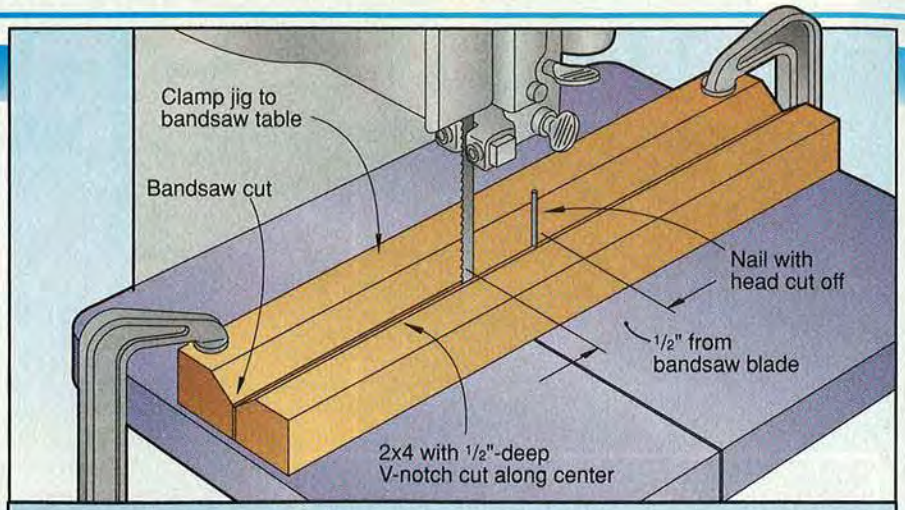
ASK WOOD

Continued from page 12

How to cut a dowel lengthwise

I need to cut a number of dowels lengthwise, in diameters of 3/8" and larger. Can you provide a safe and easy way to do this?

—Anton Derbort, Clarksville, Tenn.


Clamp jig to bandsaw table
Bandsaw cut
Nail with head cut off
1/2" from bandsaw blade
2x4 with 1/2"-deep V-notch cut along center

V-BLOCK FOR SAWING DOWELS LENGTHWISE

The jig shown in the drawing *right* will make the task easier, Anton. Cut this V-block from a 2×4 to a length equal to that of your bandsaw table. Form the V-shaped groove by sawing two ½"-deep, intersecting 45° cuts down the center of the block.

Bandsaw a slot lengthwise along the bottom of the V-groove, to a point halfway through the block. Make an anti-rotation pin from a small brad equal to the width of the bandsaw blade kerf. Drive this nail into the bottom of the V-groove, ½" beyond the end of the bandsaw cut. Cut the head off the brad to allow it to fit into the saw kerf on the dowels. Then clamp this jig in place on the saw, with the bandsaw blade at the end of the cut.

Feed dowels along the V-groove and into the bandsaw blade, pushing them for the first half of the cut, and then pulling the dowel the rest of the way through. Because of an uneven tooth set, some bandsaw blades pull toward one side while cutting. If you notice that the dowel seems to bind while moving through the blade, unclamp the jig and slightly move the feeding end of the jig in the direction of the blade pull. Reclamp the jig, and continue cutting your dowels.

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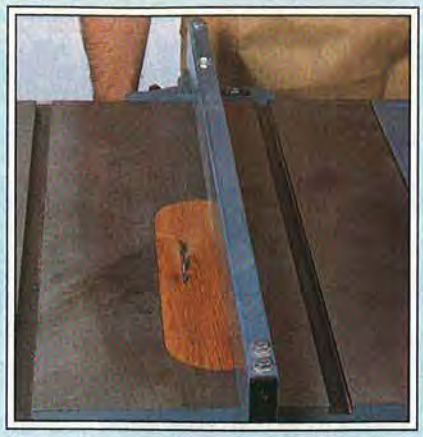
DW443 RIGHT ANGLE ROS

A safer insert

While crosscutting a 4" pine board, my tablesaw insert tangled with my saw blade, flew out and hit me in the chest. The insert is now bent, and my carbide saw blade is missing a tooth. Is there a safer kind of tablesaw insert?

—Harold (Fritz) Marple, Pollock Pines, Calif.

For best results, allow the hotmelt adhesive to cool for 10-15 seconds before putting the insert in place.



Hold down the insert with your rip fence and slowly raise the blade. *Be careful not to cut into the rip fence!*

Yes, Fritz, there is. We suspect that a chip of wood wedged between the insert and the saw blade, or that your saw had a loose-fitting insert that vibrated into contact with the blade. To solve this problem, we suggest you make zero-clearance wooden inserts to fit your tablesaw.

Make these from good-quality plywood, using the old tablesaw insert as a pattern for shape and thickness. Test-fit this new insert in the table top, and make sure the saw blade turns freely under the insert. If the blade rubs the insert, use a 1" smaller blade to cut the slot. Place a drop of hotmelt glue on the "ears" in the insert opening, and set the wooden insert in place. Use a straightedge to level the insert with the saw table.

Place the rip fence over the top of the wooden insert to hold it in place while you cut the saw blade slot. Check to be sure the saw blade will clear the rip fence before making the cut.

Turn on the tablesaw, and slowly raise the saw blade to it's maximum height. This will cut an opening the same width as the blade, reducing the chance of scraps binding between the saw blade and the insert.

Print this article

A dynamic duo for dead-on dadoes

STRAIGHTEDGE AND STORY POLE

Any project with shelves can turn into a disaster if the dadoes that accept those shelves don't line up correctly. Fortunately, all you need are the two simple helpers shown here. Our straightedge and story pole will help you cut perfectly matched sets of dadoes along the length of any number of panels.

Build the straightedge and story pole to the dimensions shown, or make the story pole at least as long as your longest panel, and the straightedge 9" longer than your panel's width. Both must be built from stock the same thickness as your panel. To see how to use this pair, turn to "Develop Your Shop Skills" on *page 56.*

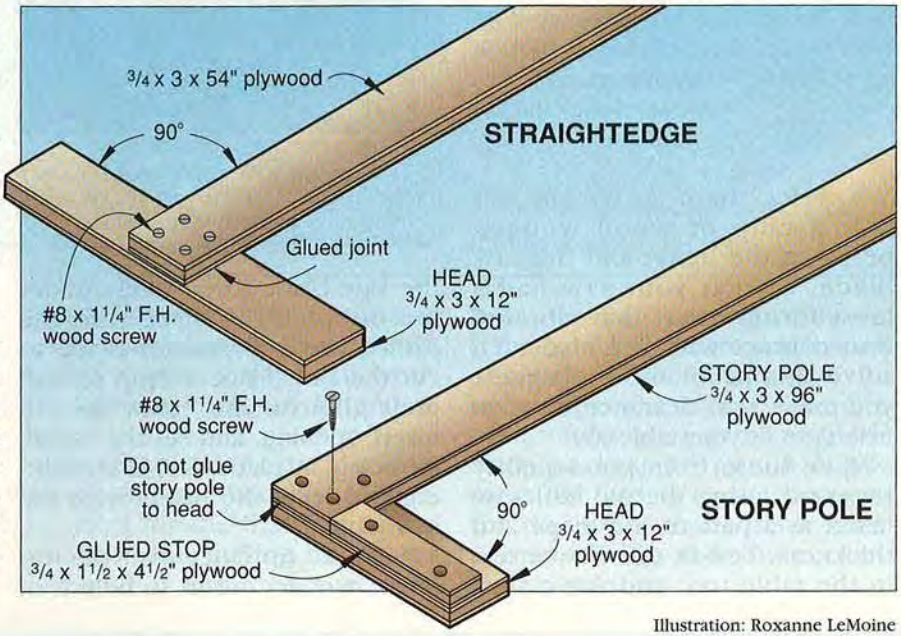


Illustration: Roxanne LeMoine

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This lightweight saw also features left side blade placement for better visibility and ease of use. And its thin-kerf, carbide-tipped blade yields more cuts per charge and a cleaner cut.

Once you try the new 14.4 or 12.0 volt DeWalt Cordless Saw, every other Cordless Saw will seem like a toy. For more information, call 1-800-4-DEWALT.

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GUARANTEED TOUGH.

Clean up your act with a glue applicator

Formerly available through catalogs or specialty stores, this handy product has now gone retail under the name Craftsman Woodworker's Gluing Kit. The kit includes a 2⅜"-long roller, a biscuit-joining applicator, and a squeeze bottle.

I used the roller to apply glue to the edges of several window valances. The roller spread the glue evenly and efficiently, and I never had to stop to clean it. Another nice feature: you can screw both applicator heads to the top of a 1-pint bottle of woodworker's glue.

For biscuit joints, the glue comes out through a small hole in a curved applicator that fits size 0, 10, and 20 biscuit slots. To spread the glue you rock the applicator back and forth. Cleaning proved simple: just wash off the wet glue or let it dry and peel it off.

These applicators speed up gluing, help keep you from spreading on too much glue, and cut down on the mess. If you've never used one, I think you'll find the Sears kit a handy addition to your shop.

—Tested by Bob McFarlin

Sears Craftsman Woodworker's Gluing Kit #67254, about $10, at Sears stores nationwide.

Make your wood shine with this wood-buffing system

Want to know the best way to bring out the natural beauty of your woodworking projects? It's simple! Buff the top coat of the finish with polishing compounds. On larger woodworking projects, you can get the job done either by hand with a linen cloth or by using a buffing machine.

But for smaller items, I recommend the Beall Wood-Buffing System. It consists of three buffing wheels, three compounds, and a quick-change adapter that fits either a ½" or ⅝" motor shaft. The company recommends that you use at least a ½-hp motor that runs at 1725 rpm.

To use this three-stage system, mount the linen wheel on your motor shaft and load the wheel with a light coat of the tripoli compound. After buffing with the tripoli compound, change to the linen/flannel wheel and the white-diamond compound. Follow that with carnauba wax and the all-flannel wheel.

With the first two compounds, it took me less than a minute per wheel to achieve the luster I wanted on a couple of turned bowls. The final buffing, with carnauba wax, required just seconds. I found the results beautiful—the color and the grain of the wood were enhanced, without the thick surface film you see on many wood finishes.

A friend of mine also used this system to spruce up a well-worn gun stock, and his results looked better than the finishes you see on most new guns. I recommend this product to anyone who makes bandsawn boxes, bowls, turnings, smooth carvings, and other woodcrafts that need a highly polished finish.

—Tested by Marlen Kemmet

Beall Wood-Buffing System, $76.49 ppd., from Leichtung Workshops, 4944 Commerce Parkway, Cleveland, OH 44128. Call 800/321-6840.

Continued on page 20

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GUARANTEED TOUGH.

Continued from page 18

Corian: looks like stone, works like wood

Last winter, the folks at DuPont Corian called us with a question. Did we think home woodworkers would be interested in working with Corian—the solid-surface material most often seen in high-end countertops? We decided the only way to find out was to get some into our shop and try it.

The first thing we discovered was that you can cut Corian with any of the carbide-tipped cutting tools in your shop. The material machines with no more difficulty than a dense hardwood. A router works best because it leaves a polished surface that doesn't need sanding. We recommend ½"-shank bits and routers that are 2 hp or bigger to eliminate chatter. You can also cut Corian with a carbide-tipped blade on your tablesaw or radial-arm saw, but this method requires that you sand the cut edge.

Jigsaw, scrollsaw, and bandsaw blades with 10 to 14 teeth per inch will cut Corian as well. On the darker colors, the sawn edges develop a chalky appearance and require a lot of sanding to reestablish the color and luster. If you want to scrollsaw or bandsaw a project with hard-to-sand curves, stick with one of the lighter shades of Corian—they won't show the saw marks as much.

On a lathe, glued-up blanks of Corian turn smoothly using standard tools. But be prepared to sharpen your tools more often than normal. Corian also yields well to rasps and files.

Here are a few examples of what our magazine staff created out of Corian. Plans for the napkin holders will appear in the August 1995 issue of *WOOD*® magazine.

Carbide-tipped router bits enable you to put a polished edge on Corian.

One surprise we found was that cutting Corian creates an unusual smell. The odor and dust are not toxic, but wear a dust mask anyway. We also recommend that you use dust-collection equipment to prevent the dust from spreading throughout your shop.

To join Corian we used a special adhesive that camouflages joint lines. This adhesive is not available to the general public, but you can successfully join Corian to Corian, or Corian to wood with many other adhesives. Clear cyanoacrylate (CA) glue and clear epoxies provide the strongest bond and minimize the visibility of joint lines. Other gluing options include silicone sealants, panel adhesives, and plastic cement.

To finish a project, you work through successively finer grits of sandpaper and then polish with Scotch-Brite pads. Stop when you reach the desired luster. Corian doesn't have any grain, so you can sand in any direction.

Due to the small size of the sheets available to consumers, you won't be able to build your own countertops or use Corian on large projects. Countertop installations require special techniques that are best left to trained fabricators. But we think most woodworkers will find a lot of creative uses for Corian including decorative accents, inlays, water-resistant surfaces, and small projects. And in the February issue of *WOOD* magazine, we'll give you a Corian project to build and show you more about working with this stone-like material.

—Tested by the* WOOD *staff

DuPont Corian, ½×12×15" sheets in 10 colors, about $28; ¼×12×15" sheets in six colors, about $18. From Leichtung Workshops, 4944 Commerce Parkway, Cleveland, OH 44128. Call 800/321-6840. For additional colors or different sizes, call Art Specialties International at 800/724-4008. For more information on Corian, call DuPont at 800/426-7426.

Continued on page 22

NEW... FROM THE PUBLISHERS OF *FINE WOODWORKING* MAGAZINE

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turn to *Home Furniture* magazine for design information and inspiration.

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Taunton
MAGAZINES
for fellow enthusiasts

Continued from page 20

Unique tooth profile sets these saws apart

With so much emphasis today on electric-powered cutting tools, you won't find much innovation in the technology of handsaws. That's not the case, however, with the two Sandvik Razor Handsaws I tried recently—a 16"/10-point handsaw and a 14"/16-point model.

A close visual check revealed heat-tempered teeth with well-sharpened edges. You can't resharpen heat-tempered teeth, but the tempering ensures that they will stay sharp for years.

The major innovation with these saws is what the company calls XT-toothing. Unlike ordinary saws with teeth set to alternating sides, Sandvik only sets every third tooth. The result: you get less friction than with saws with alternating-set teeth, more aggressive cutting, and better tracking.

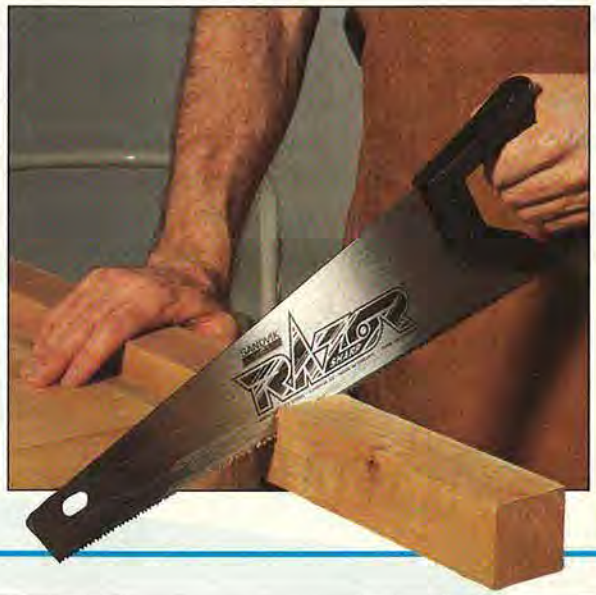
With the 16" handsaw, I experienced none of the usual problems such as the saw binding or jumping in the kerf. Even when starting a cut on a pull stroke, this saw tracked almost like it was held in place with a miter box.

The 14" saw also cuts well, although a bit slower due to its smaller teeth. Where it really shines is in cutting plastic like PVC pipe. It's much faster than a hacksaw and offers better control.

Overall, I found both saws a pleasure to use. If you've given up on conventional handsaws, these Sandvik handsaws just might win you back.

—Tested by Matt Ver Steeg

Sandvik 16" Razor Handsaw, about $19, 14" Razor Handsaw, about $11, at hardware stores and homecenters. Contact: Sandvik Saws and Tools Co., P. O. Box 2036, Scranton, PA 18501. Call 800/828-9893, ext. 400.



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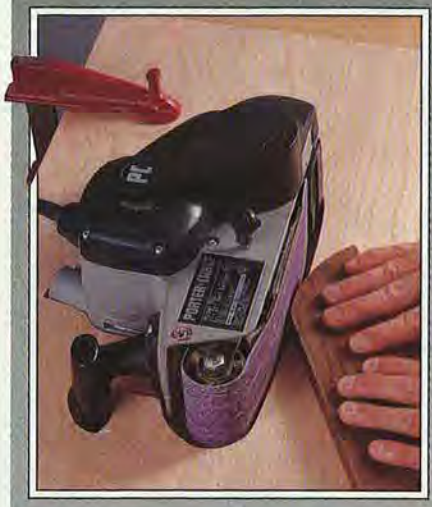

Like many home shop enthusiasts, I worked wood for years with nothing more than a few portable power tools. That's why I appreciate shop tips like Dan Knippel's prize-winning jig that turns a belt sander into an edging tool as shown *above* and *far right.* For another tip that improves the versatility of a portable tool, see Michael Covington's circular-saw cutoff jig on *page 26.* These ideas epitomize the clever thinking we like to see in shop tips.

Any time you develop a new shop tip, please let us know. If we choose your tip we'll pay you $40, plus you'll get a shot at winning a new tool for the top tip. Just send a brief description of the idea and a drawing or photo to:

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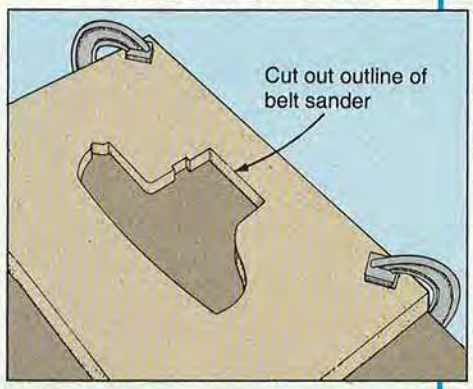
Tom Jackson
General-Interest Editor

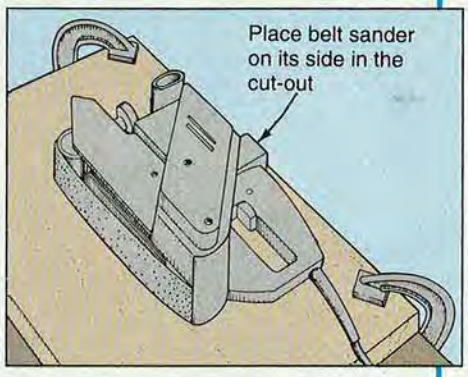
Plywood turns belt sander into edge-sanding tool

When you need to sand something at a right angle, you should use an edge sander. But these specialized machines cost a lot of money and can take up valuable room in a small shop.

TIP: Make your belt sander do double duty as an edge sander by laying it on its side and securing it with a plywood cutout and clamps. Trace the outline of your belt sander on a piece of ¾" plywood about 2'-square. With a jigsaw, cut out the shape of your belt sander, and leave an extra ¼" clearance at the bottom of the template for the belt to move freely. If your sander cuts into the bench below, shim it up ⅛", and place a clamp on the sander to steady it.

—Daniel Knippel, Ft. Huachuca, Ariz.





TOP SHOP TIP

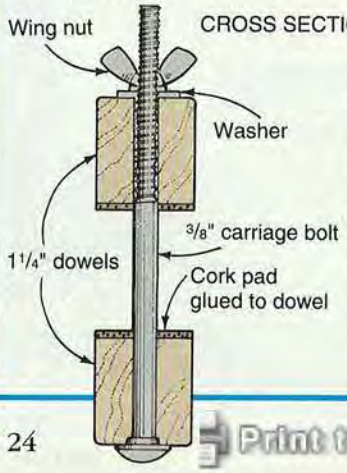
As the winner of this month's top shop tip, Daniel Knippel receives a Black & Decker Quantum portable electric planer .

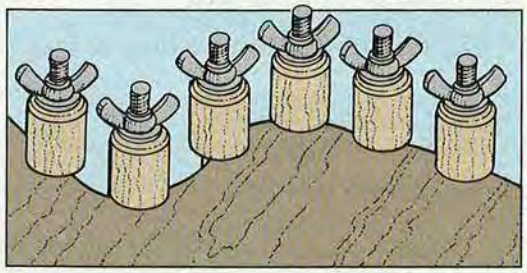
Spool clamps keep thin stock tight on a curved edge

You need to clamp a thin piece of stock on the top edge of a curved box. But your regular clamps are too bulky to arrange in a tight formation around the curves.

TIP: Make a dozen or so of these spool clamps favored by musical-instrument makers and you can apply even pressure to any curved edge. Round over the end of a 1¼"-diameter closet-pole dowel, then cut it about 1¾" long. Glue a piece of cork on the flat end, and drill a ⅜" hole through the center. Run a carriage bolt long enough to fit the depth of the project you're clamping through two of the pieces as shown *left*, and use a wing nut to clamp down.

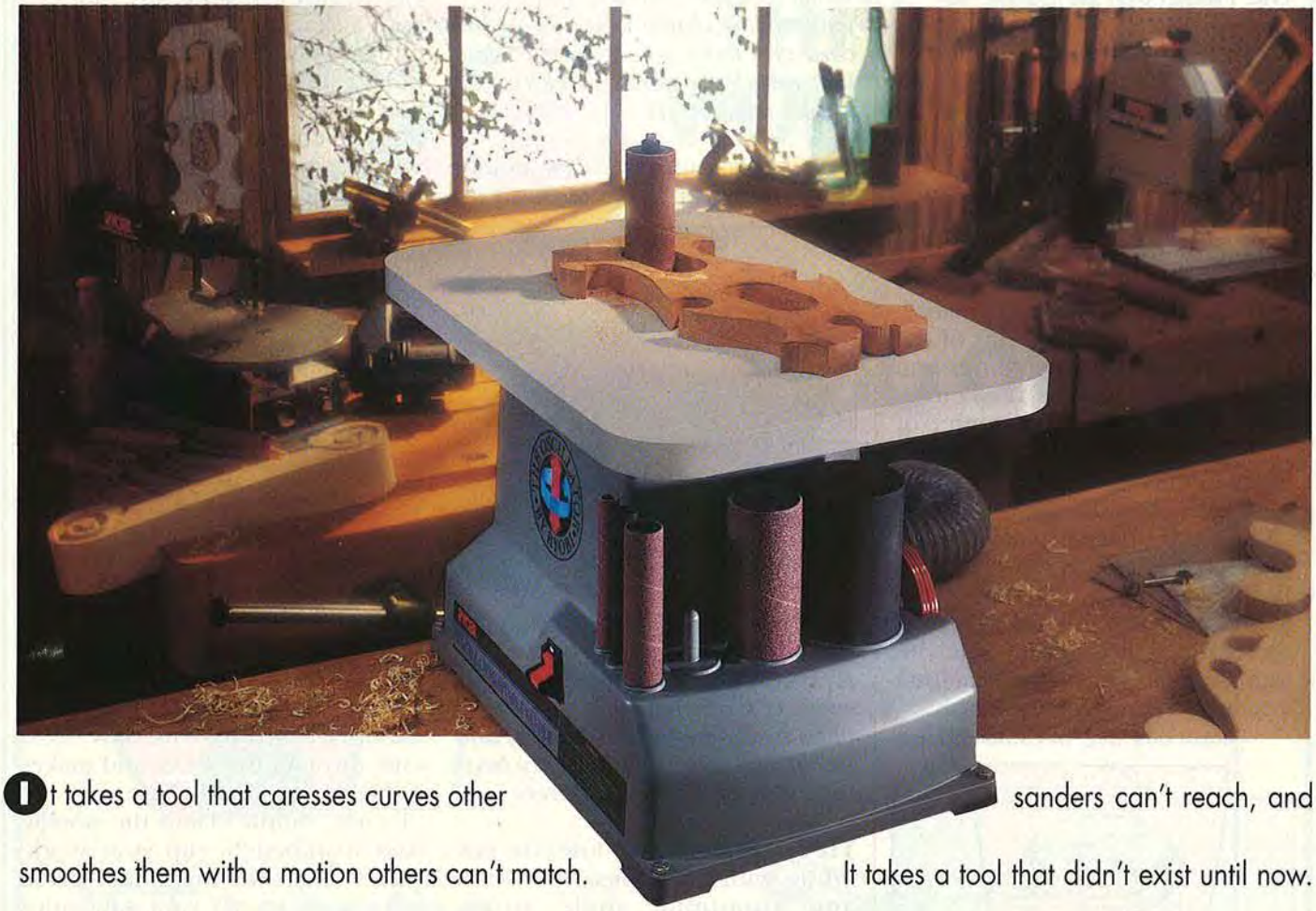
—from the **WOOD** *magazine shop*





Continued on page 26

Man has always been attracted to curves. But until now, no one quite knew how to sand them.



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Continued from page 24

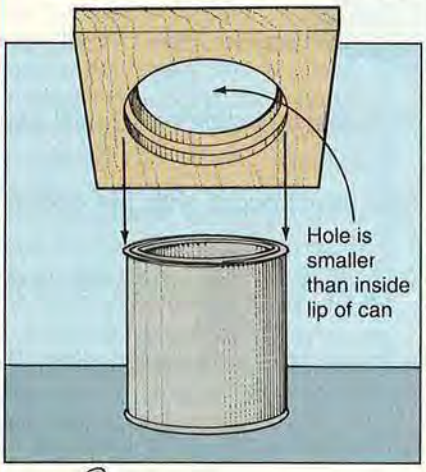
Paint-can cover protects the rim from drips

Nothing ruins a can of paint or varnish faster than having the liquid dry up inside the rim. How do you keep this area clean and still have a surface to wipe your brush on?

TIP: Make yourself a paint-can protector from a piece of scrap 1× material. Start with a jigsaw and cut out a circle an inch smaller than the inside diameter of the can rim. Then take a router and cut a rabbet around that circle that fits the outside diameter of the can. The depth of the rabbet should equal about half the thickness of the board.

When you open the can, slip the protector over the top. The rabbet should fit snuggly over the paint can, and the smaller diameter circle will cover up the rim and give you a surface against which you can wipe the brush.

—Loyal Downing, Des Moines, Iowa

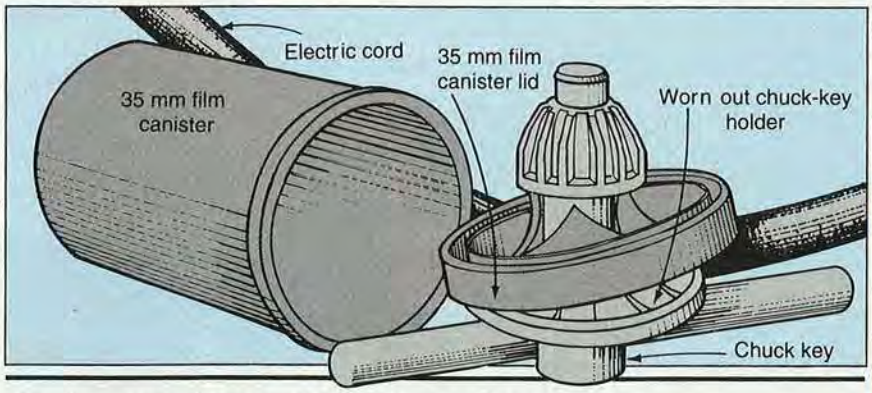


Hang on to your drill-chuck key with a film-can lid

Those plastic holders that keep your drill's chuck key tied to the cord can save you loads of time, but what do you do when the holder wears out?

TIP: Make yourself a new holder from the lid of a 35mm film can. Cut an X in the lid of the film can with a sharp knife. Keep your drill chuck key on the old worn-out holder and push the head of the key through the X in the film can lid. The chuck key and old holder will stay put.

—Mike Worden, Springfield, Ga.



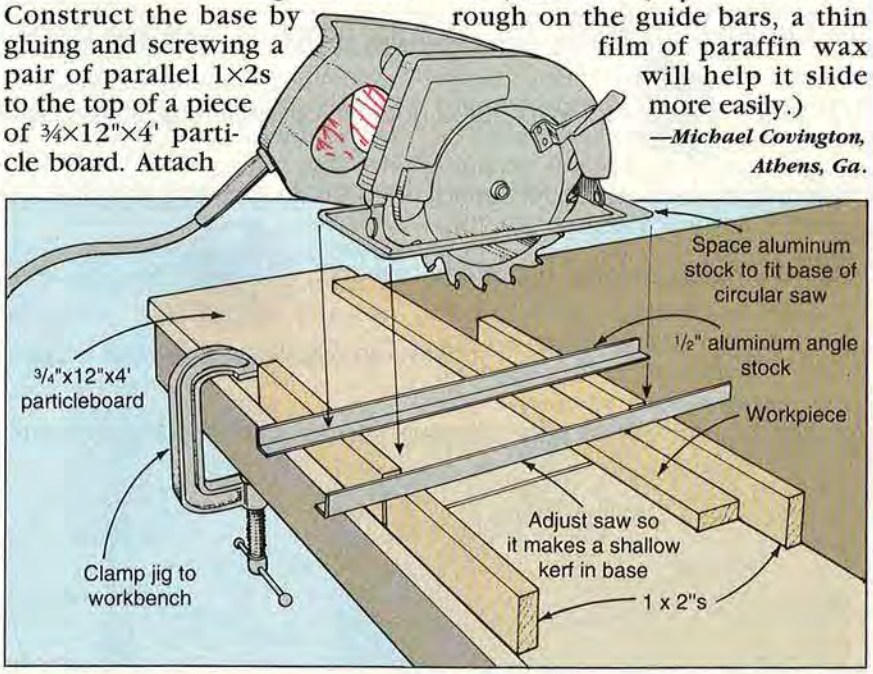
Do-it-yourself cut-off jig uses a circular saw

Clean crosscuts often prove elusive with a hand-held circular saw. It's almost impossible to push a saw perfectly straight, and the offcuts usually fall away leaving raggedy-looking splinters.

TIP: Make your own low-cost cut-off jig with a few pieces of wood and aluminum angle stock. Construct the base by gluing and screwing a pair of parallel 1×2s to the top of a piece of ¾×12"×4' particle board. Attach the aluminum angle bars at 90° to the 1×2s, and space them apart exactly the width of your saw's baseplate. Adjust the saw so it cuts through the 1×2s, and makes a shallow kerf in the base.

To use, simply clamp the saw jig to a workbench, slip your workpiece under the aluminum guide bars, and cut. (If your saw rides rough on the guide bars, a thin film of paraffin wax will help it slide more easily.)

—Michael Covington, Athens, Ga.


Space aluminum stock to fit base of circular saw
½" aluminum angle stock
¾"x12"x4' particleboard
Workpiece
Adjust saw so it makes a shallow kerf in base
Clamp jig to workbench
1 x 2"s

Continued on page 28

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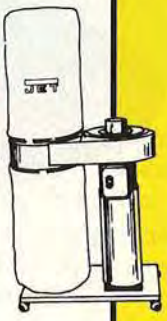

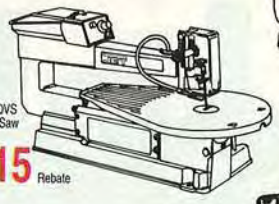

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TIPS FROM YOUR SHOP (AND OURS)

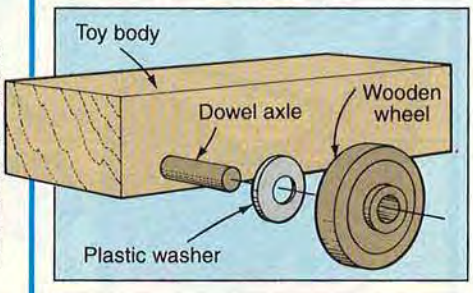
Continued from page 26

Keep those toys rolling with plastic washers

Wooden wheels on toy projects often don't turn freely due to the wood-on-wood friction between the wheel and the toy.

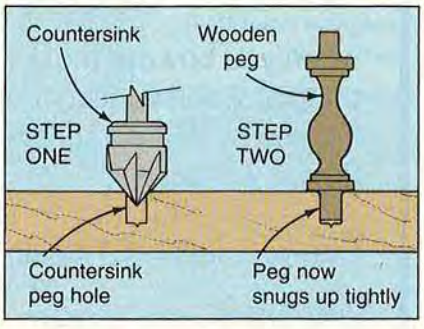
TIP: Make some plastic washers to reduce this friction. Cut your washers from any thin plastic such as coffee-can lids. Use a hole punch, knife, or scissors to cut the hole for the axle. Slide the washers between the wheel and the toy body and the wheels will spin easily.

—Carl Uberig, Beverly Hills, Fla.



Turned parts fit flush in countersunk holes

The ready-made Shaker pegs you're using don't fit snugly into the holes in your project. A closer look reveals a slightly rounded corner, rather than a square one, where the tenon meets the shoulder of the peg.

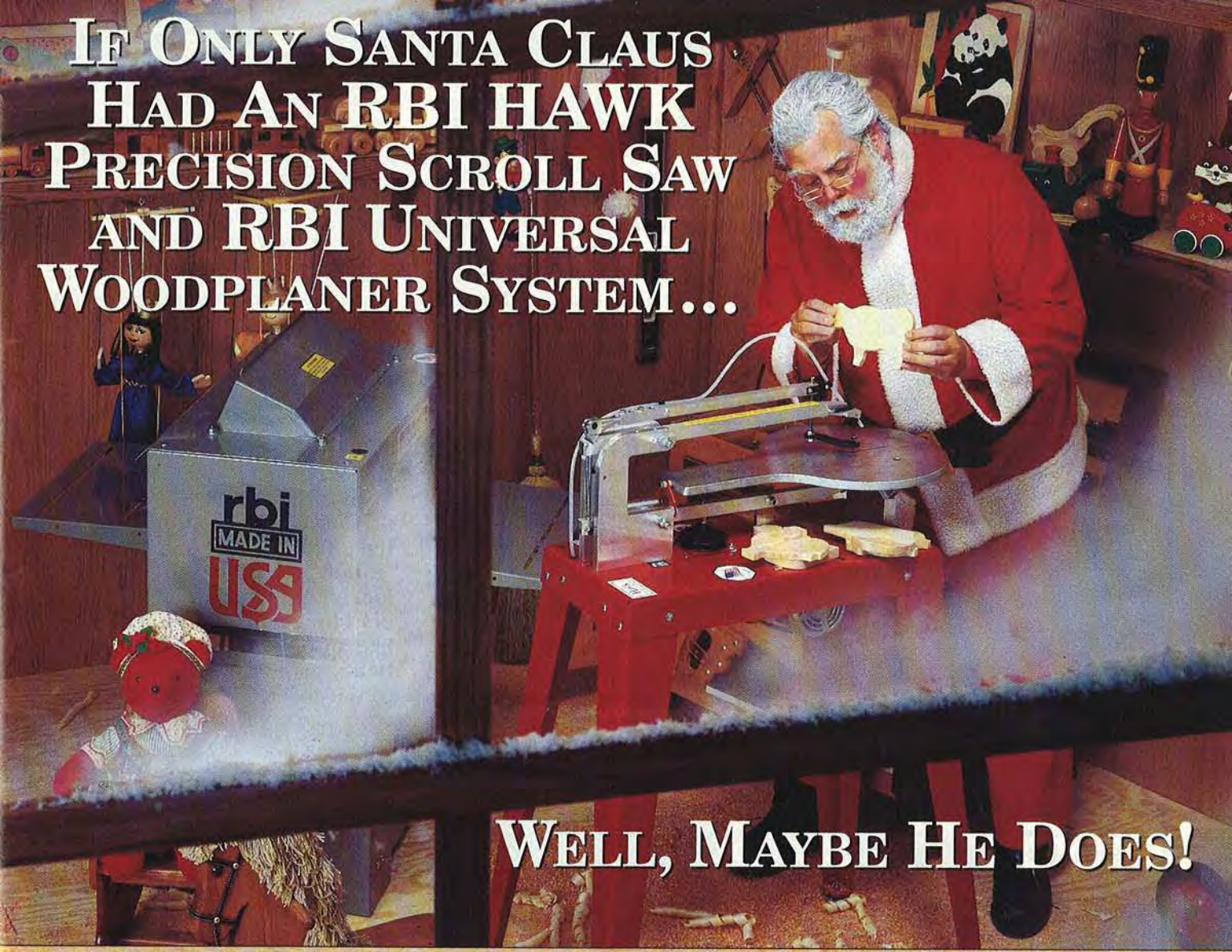


TIP: Countersink the holes for the pegs (or other turned parts) before you clamp the pieces together. The slight relief will allow the turned part to seat solidly against the face of the part, as shown *above*.

—Don Arnsmeier, Darlington, Wis.

Continued on page 30

If Only Santa Claus Had An RBI HAWK Precision Scroll Saw and RBI Universal Woodplaner System...



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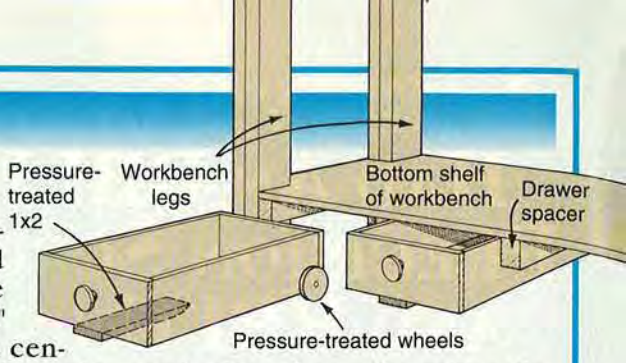
Continued from page 28

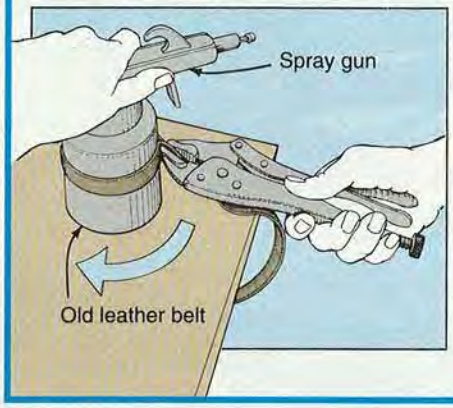
Store more with rolling drawers under the bench

You've built shelves and racks and used up most of your wall space for storage. But like most woodworkers, you need more.

TIP: Don't overlook the space under your bench. The bottom shelf on most benches sits 4-8" off the floor, giving you plenty of room for expansion. To take advantage of this space, build these simple floor drawers with pressure-treated wooden wheels at the rear and a strip of 1×2" pressure-treated wood centered on the bottom as shown in the illustration *right*. Glue and screw 1×2" drawer spacers to the underside of the bench shelf to keep the drawers in line. To ensure that the drawers don't rock when they roll, position the wheels so they extend ¾" below the bottom of the drawer (to match the ¾" thickness of the pressure-treated wood.



—Arthur Griggs, Glencoe, Ill.



Old belt puts the squeeze on hard-to-open canisters

Unscrewing the lid from a large container, like a spray gun, can frustrate even those of us with good grips. And once something's stuck, your project comes to a grinding halt.

TIP: Use an old leather belt and a pair of locking pliers to pop open just about any stubborn canister. Cut the buckle-end off the belt and wrap it around the can. To avoid crushing or crimping the metal sides, position the belt near the top of the can.

Pinch the belt tight with the locking pliers and rotate the pliers clockwise. The pliers work like an offset cam, tightening the belt's grip and increasing your torque for easy opening.

—Don Whittemore, Pueblo, Colo.

Continued on page 33

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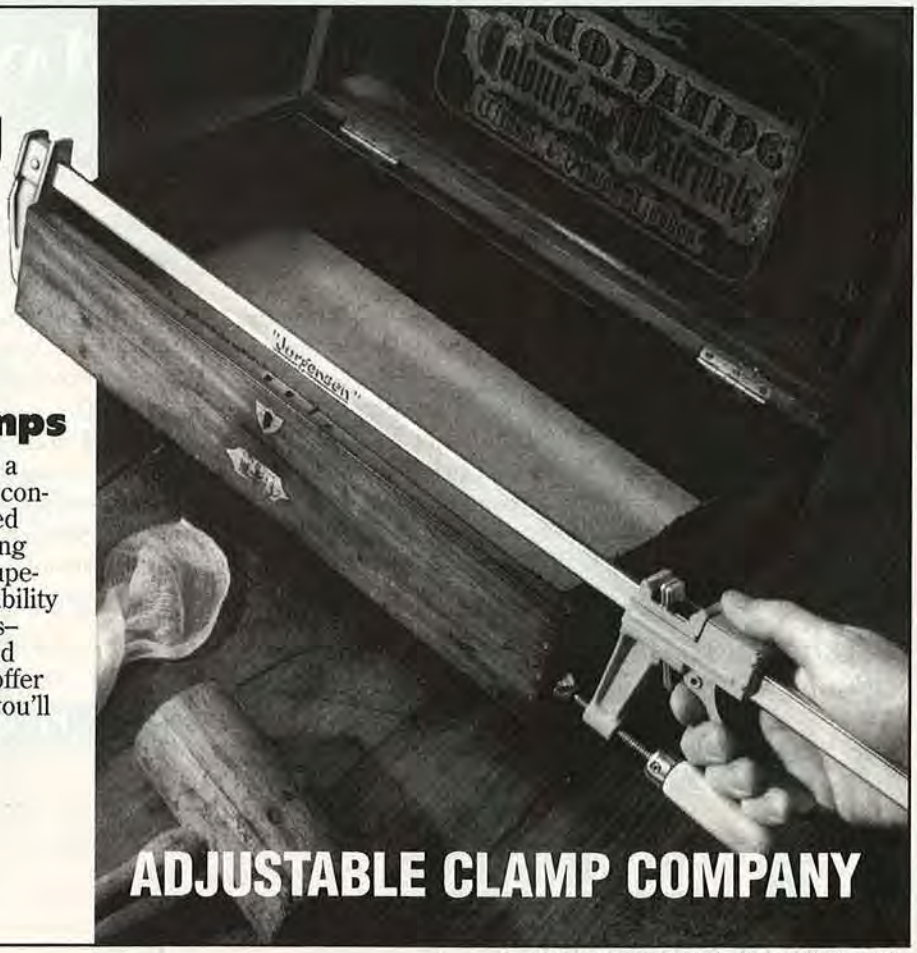

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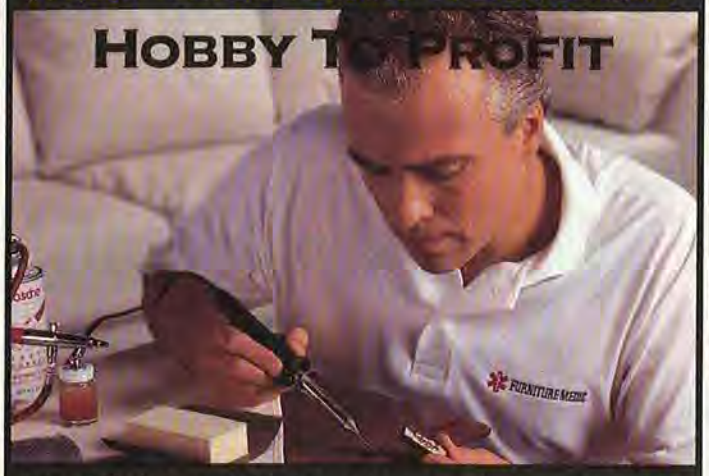

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314	4-3/8" Trim Saw	137
9314	Trim Saw w/ Case	151
315-1	7 1/4" Circular Saw	117
9315-1	Saw w/Case	138
351	3x21 Belt Sander	149
352	3x21 BeltSander w/bag	152
352VS	Variable Speed 352	158
360	3x24 BeltSander w/bag	189
361	3x24 BeltSander	182
362	4x24 BeltSander w/bag	199
363	4x24 BeltSander	191
410	Underscribe Router	148
505	1/2 Sheet Sander	118
556	Biscuit Joiner w/adj.fence	172
690	1 1/2 Hp Router	133
9690	Router with Case	144
691	1 1/2 Hp D-handle Router	148
6931	Plunge Base	74
695	Router Table&Motor	216
696	Router TableOnly	128
1700	Heat Gun	66
5008	12" Dovetail Jig	78
5116	16" Dovetail Jig	257
7116	24" Dovetail Jig	294
7334	5" R.O. Sander	119
73333	Dust Kit for R.O.Sander	23
7536	3 1/4 hp Plunge Router	233
7539	VS Plunge Router	261
9118	Door Plane Kit	204
9629	Recipro Saw	147
59381	Hinge Mortise Jig	165
97310	Trimmer kit	193

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T60	50" CommercialFence	$ 297
HS52	50" Home Shop	237
HS40	40" Home Shop	207
TABLE SAW INSERTS		9.95

REG

EZ1320	Cordless Screwdriver Kit	$ 79
ST8E380	Jig Saw	59
VS280	1/2 sheet sander	39

RYOBI
OSS450 Spindle Sander $169

AG1200V	Heat Gun	$ 39
AP10	10" Planer	369
AP10 Replacement Blades		*24.95*
BS900	NEW! 9" Band Saw	173
BT3000	Table Saw	529
DS1000	Detail Sander	39
JP155	6" Planer	299
JM100K	Biscuit Jointer	209
QS1000	Quick Stand	42
R50K	Trimmer 2 base Special	99
R70K	Trimmer 2base Special	99
RA202	8" Radial Arm Saw	388
RE600	3hp Plunge Router	219
RS112	Random Orbit Sander	54
RS115	HD Random Orbit Sander	73
S550	Finish Sander	53
SC160	Scroll Saw	134
TR30U	Laminate Trimmer	85
TS251	10" Miter Saw	169
TS254	10" Miter Saw	197
TS260	10"Comp.Miter Saw	238
TS380	15" Miter Saw	365

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NAIL GUNS
241SK 18 G 3/8-1-1/2"Kit $98

250SK	18 G 3/4- 2" Kit	164
350K	16G 3/4- 2" Kit	198
565T	1- 2-1/2" Finish Gun	204
626SK	1/4"Crown 1" Stapler Kit	104
635SK	1/4"Crown 1-3/8" Stapler	164
8290	6d-16d Firming Nailer	318

Emglo

AM39HC4V	3/4 HP- 2 tank	$ 288
AM78HC2	11/2 HP-1 tank	279
AM78HC4V	11/2 HP-2 tank	299
AM78DOLHC4V		
New! Oilless 11/2 HP-2 tank		299

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94-100	5 pc Router Bit Cabinetset	$ 158
91-100	13 pc 1/2"Shank Bit Set	189
92-100	26 pc 1/4"Shank Bit Set	299
LU85M010	10" 80T Finish	58
LU84M011	10" 50T Combo	39
LM72M010	10" 24T Rip	36
LU85M015	15" 108T Finish	98
LU82M010	10" 60T Chipboard	45
LU89M010	10" 72T Aluminum	57
LU92M010	10" 60T Corian®	58
LU98M010	10" 80T Laminates	66
LU72M010	10" 40T ATB	39
LU87M010	10" 24T Thin Kerf	39
LU73M010	10" 60T Crosscut	44

SMARTLEVEL

SL224	2' economy Level	$ 54
PR24S	2' Pro Level w/case	88
PR48S	4' Pro Level w/case	105

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2464	24"	$ 39
2469	36"	42
2467	48"	49
2501	10" POCKET LEVEL	25
2699	6 ft —3vial	99
2700	6 ft 6" —3vial	115
2701	8 ft —3vial	125
Economy Style 24" 2434		25
Economy Style 48" 2437		39
Economy Style 72" 2411		59

Pockethole maker $ 109
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Milwaukee

0229-1	3/8" Keyless Drill	$ 108
0407-1	Cordless Drill Kit-2batt	172
0564-1	Cordless Drain Cleaner	192
3900-1	Rt Angle Drill	189
6192	Die Grinder	174
5362-1	1" Hawk Hammer	318
5365-1	1" Hawk Hammer Kit	348
5369-1	3/4" D-handle Falcon Kit	238
5371-1	1/2" Hammer Drill	183
5375-1	1/2" Hammer Drill Kit	178
5392-1	3/8" Hammer Drill	126
6140	4 1/2" Grinder	98
6142	4 1/2" Grinder Kit	123
6175	14" Chop Saw	278
6369	7 1/4" Circ.saw Kit	147
6460	10" Circular Saw	258
6490	10" Miter Saw	254
6491	10" Miter Saw w/80t Blade	268
6526	VS Super Sawzall	164
6539-1	Inline Screwdriver	74
6546-1	2 spd Inline Screwdriver	81
6767-1	Screwdriver Kit	134
6980	Heat Gun Kit	91

6535 Dual range VS Sawzall $115

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120	9.85	100 pc	17.95	12.95
150	9.85	100 pc	17.95	12.95
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220	9.85	100 pc	17.95	12.95

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C12FA	12" Miter Saw	299
NR83A	Framing Nailer	379
TR6	Laminate Trimmer	91

DEWALT
DW682K Biscuit Joiner $222

DW106	3/8" Keyless Drill	73
DW610	1-1/2 Hp Router	148
DW704	12" Miter Saw	313
DW705	12" Compound	347

TRU-GRIP

	Clamp 'n Tool Guide	Back-to-Back Bench Clamp
50C	$ 29.50	BB50 $ 45.95
36C	26.50	BB36 37.95
24C	22.50	BB18 31.95

Makita

BO4510	Square Pad Sander	49
BO4530	Round Pad Sander	55
BO5000	Random Orbit Sander	63
LS 1030	10" Miter Saw	189
9.6 V "Black" Battery		24.50
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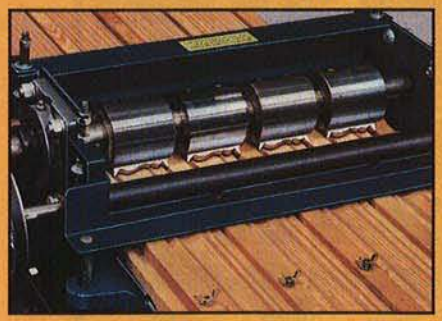

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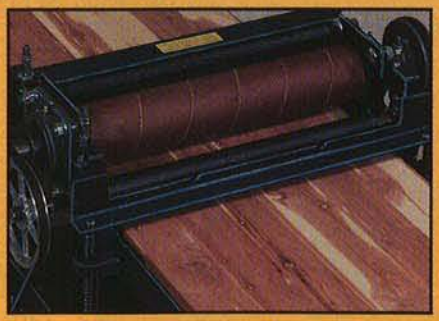

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Editor, Workbench Magazine

Best Value–"After checking them all, Woodmaster was obviously the best deal for the money. Also, I would like to acknowledge the polite and prompt service."

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TIPS FROM YOUR SHOP (AND OURS)

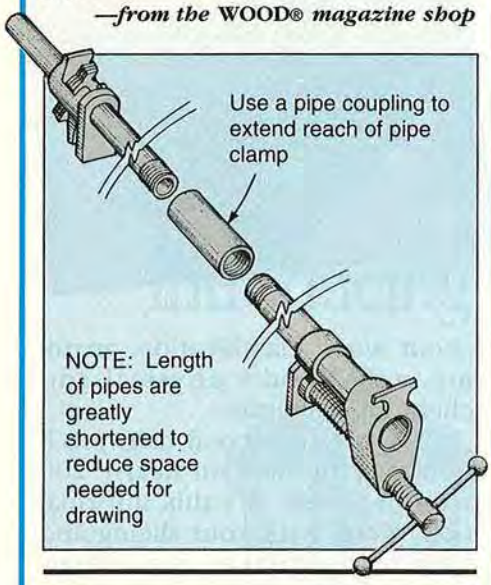
Continued from page 30

Couplings extend pipe clamps as far as you like

Oh no! You're just about ready for the big glue-up when you discover your pipe clamps aren't quite long enough. Do you have to buy a whole new rack of pipes just to gain a few inches?

TIP: Absolutely not. Buy pipe couplings instead of new pipes. These couplings come in short lengths and are threaded on the inside. Connect your too-short pipes with the couplings and you'll have more than enough pipe to do the work.

—from the **WOOD®** *magazine shop*


Use a pipe coupling to extend reach of pipe clamp
NOTE: Length of pipes are greatly shortened to reduce space needed for drawing

A FEW MORE TIPS FROM OUR WOODWORKING PROS

- When turning small bowls consider this. Use masking tape to hold the turning to the faceplate while you're turning the bowl's bottom. We show you how on *page 55*.
- Are you thinking about building an outdoor project? Find out on *page 60* why we chose white oak for our kids' sleigh.
- Do you need new cabinet doors or easy-to-build doors for a project? Check out the door-building method and the hinges we used on the corner cabinet on *page 78*.

FREE CATALOG *featuring* **HEGNER... the Better Scroll Saw**

Do you want a scroll saw that is quieter, easier to use, breaks fewer blades and produces edges that require no sanding? You can enjoy these benefits with the scroll saw *Fine Woodworking* described as "beautifully built and highly favored by our woodworkers" and *Wood magazine* chose for its original IDEA SHOP (9/92).

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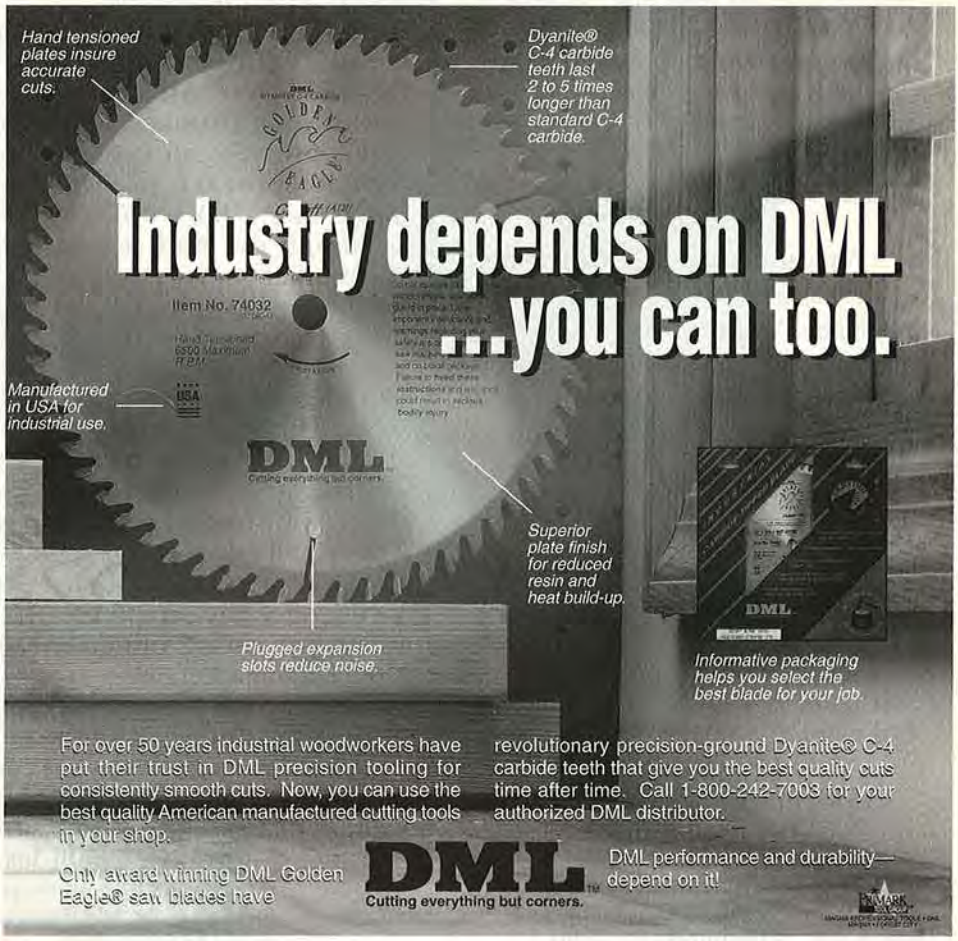
Circle No. 3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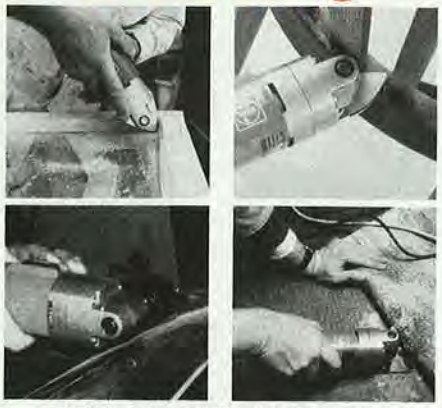

With the Fein "Triangle" Sander, time consuming, sore finger, bloody knuckle sanding, sawing, scraping & polishing are a thing of the past.

Imagine using a power tool to sand all those areas where before, you had to fold up a piece of paper and "finger sand." With the Fein "Triangle" Sander, you can sand right up to, into and along edges & corners without dulling the edge or altering the profile. Plus, the Fein Sander won't run away from or bounce off of the edge line.

But It Will Do More Than Just Sand

You can remove the triangle pad and replace it with a special circular saw blade. The saw blade is only 1/32" thick, and perfect for detail work.

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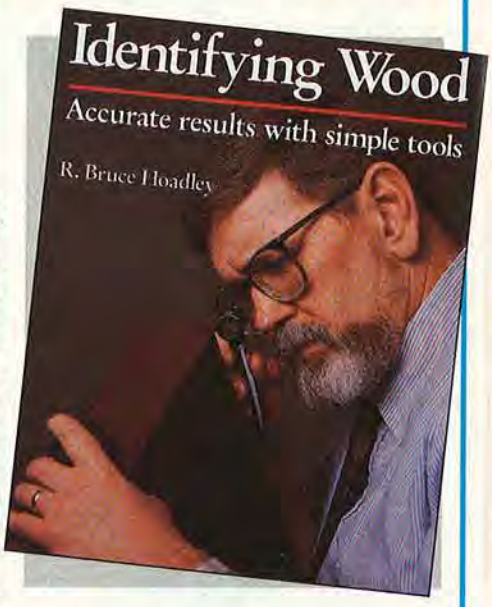
BOOK REVIEW

Print this article

IDENTIFYING WOOD

Accurate results with simple tools

R. Bruce Hoadley
The Taunton Press Inc.,
65 South Main Street
Newtown, CT 06570-5506
©1990, 223 pages
$39.95 Hardcover.



Every woodworker has encountered samples of wood he or she couldn't identify. And only a few years ago, unless you were trained in wood science, your chances of accurately identifying many of the lesser-known species were poor at best. Now, however, you can buy (or check out from your library) several books on wood (not tree) identification. One of the most colorful and serviceable of these references is R. Bruce Hoadley's *Identifying Wood: Accurate results with simple tools.*

Hoadley, holder of a Ph.D in wood technology from Yale University and an expert witness in this area in numerous court cases, provides an in-depth, systematic approach to identifying more than 180 wood species. Although dry and scholarly in places, there are rewards if you're willing to wade through the structural composition our world's woods offer.

For those of you getting started in wood collecting, you'll appreciate the help Hoadley provides to beginning hobbyists. He tells you what simple and inexpensive tools you'll need—items such as a penknife and razor blades—for slicing off wood samples for identification, and a hand lens for close examination.

By reading the illustrated chapter discussions found in the book's front half, you can develop a complete understanding of wood's cellular makeup, as well as all its possible distortions. You'll learn about wood classification, anatomy, and wood's physical and chemical properties.

In the book's second half, you'll find specific data on nearly 200 wood species. It's this information, along with your slicing and viewing equipment, that allows you to make positive identification on such species as black willow, sweetgum, and jelutong. Numerous microphotographs of tangential sections (paper-thin cuttings of end grain) enable the would-be wood scientist to match his mystery sample with those in the book. Properties such as color, odor, pore distribution, and specific gravity accompany each end-grain photo for reliable wood identification.

With Hoadley's book in hand, you may not identify every new wood sample that comes your way. But you will come much closer to the truth. And perhaps more important, you'll enjoy every last minute of the challenging detective work.

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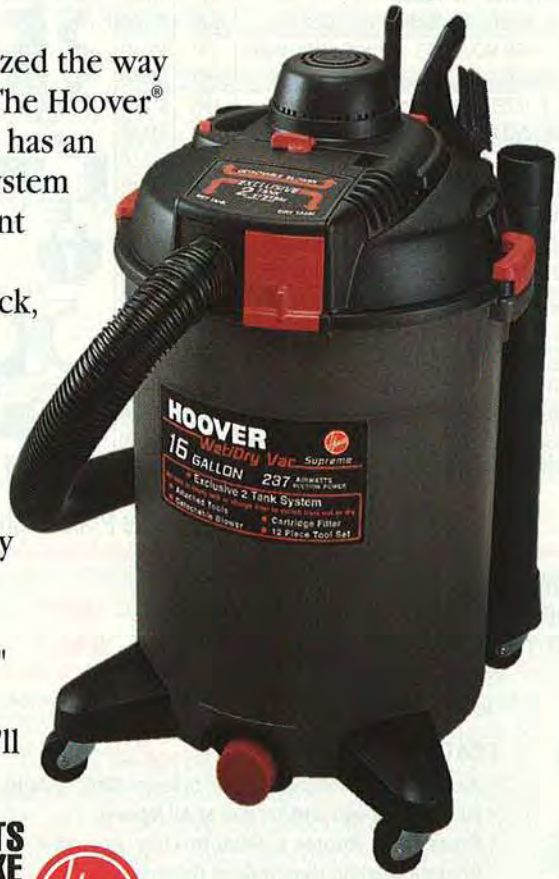

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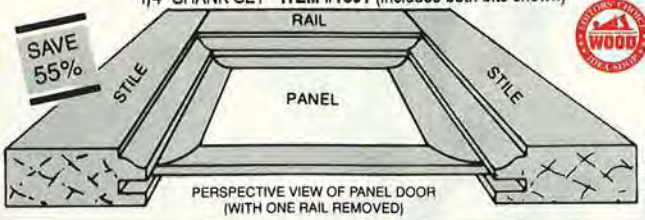

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RAISED PANEL BIT SUPPLIED WITH BALL BEARING

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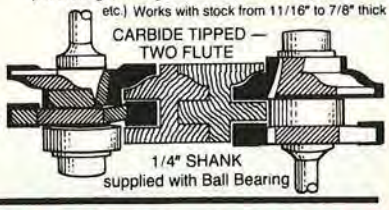
Set: Rail & Stile & Raised Panel Cutters

REVERSIBLE COMBINATION RAIL and STILE BIT

(For making matching rails and stiles in raised panel doors, etc.) Works with stock from 11/16" to 7/8" thick



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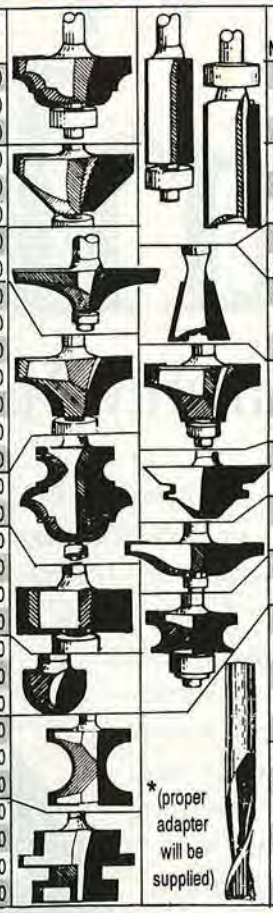
ITEM NUMBER	DESCRIPTION (ALL 2 FLUTE)	SHANK SIZE	PRICE
#1306	CLASSICAL - 3/16" Radius — 5/8" Cutting Length	1/4"	$22.50
#1307	CLASSICAL - 1/4" Radius — 3/4" Cutting Length	1/4"	$25.00
#1308	CLASSICAL - 3/16" Radius — 5/8" Cutting Length	1/2"	$22.50
#1309	45° CHAMFER - 3/8" Cutting Length	1/4"	$13.00
#1310	45° CHAMFER - 5/8" Cutting Length NEW !	1/4"	$15.00
#1311	45° CHAMFER - 5/8" Cutting Length	1/2"	$17.00
#1312	THUMBNAIL - 1- 3/16" Large Diameter	1/4"	$18.50
#1313	THUMBNAIL - 2-1/2" Large Diameter	1/2"	$35.00
#1314	ROUND OVER - 1/8" Radius	1/4"	$11.00
#1315	ROUND OVER - 3/16" Radius	1/4"	$11.00
#1316	ROUND OVER - 5/16" Radius	1/4"	$14.00
#1317	ROUND OVER - 1/4" Radius NEW !	1/2"	$12.00
#1318	ROUND OVER - 3/8" Radius	1/2"	$15.50
#1319	ROUND OVER - 1/2" Radius	1/2"	$17.00
#1320	ROUND OVER - 3/4" Radius	1/2"	$21.00
#1321	MULTIFORM MOULDING - 15/16" Carbide Height	1/4"	$40.00
#1322	MULTIFORM MOULDING - 2" Carbide Height	1/2"	$40.00
#1323	SLOT CUTTER - 3/8" Deep	1/4"	$14.00
#1324	RABBETING - 1/4" Deep NEW !	1/4"	$15.00
#1325	RABBETING - 3/8" Deep	1/4"	$13.00
#1326	RABBETING - 3/8" Deep	1/2"	$13.00
#1327	CORE BOX - 3/8" Large Diameter	1/4"	$11.00
#1328	CORE BOX - 1/2" Large Diameter	1/4"	$13.00
#1329	CORE BOX - 3/4" Large Diameter	1/4"	$15.00
#1330	BULL NOSE - 1/2" Diameter of Circle	1/4"	$16.00
#1331	BULL NOSE - 3/4" Diameter of Circle	1/4"	$21.00
#1332	BULL NOSE - 3/4" Diameter of Circle	1/2"	$21.00
#1333	TONGUE & GROOVE - Straight	1/4"	$29.00
#1334	TONGUE & GROOVE - Straight	1/2"	$29.00
#1335	TONGUE & GROOVE - Wedge	1/4"	$29.00
#1336	TONGUE & GROOVE - Wedge	1/2"	$29.00



ITEM NUMBER	DESCRIPTION (ALL 2 FLUTE)	SHANK SIZE	PRICE
#1337	FLUSH TRIM - 3/8" Diameter — 1" Cutting Length	1/4"	$ 7.50
#1338	FLUSH TRIM - 1/2" Diameter — 1" Cutting Length	1/4"	$ 8.00
#1339	FLUSH TRIM - 1/2" Diameter — 1-3/16" Cut. Length	1/2"	$ 8.00
#1340	PATTERN / FLUSH TRIM - 1/2" Diameter	1/4"	$15.00
#1341	PATTERN / FLUSH TRIM - 3/4" Diameter NEW !	1/4"	$17.00
#1342	PATTERN / FLUSH TRIM - 3/4" Diameter	1/2"	$19.00
#1343	KEYHOLE CUTTER - 3/8" (bit not	1/4"	$ 8.50
#1344	KEYHOLE CUTTER - 1/2" shown)	1/4"	$ 9.00
#1345	DOVETAIL (HSS) - 1/4" Diameter — 7-1/2°	1/4"	$ 6.50
#1346	DOVETAIL - 1/2" Diameter — 14° NEW !	1/4"	$ 6.00
#1347	DOVETAIL - 1/2" Diameter — 14°	1/2"	$ 6.50
#1348	BEADING - 1/4" Radius	1/4"	$13.00
#1349	BEADING - 3/8" Radius	1/4"	$15.50
#1350	BEADING - 1/2" Radius	1/4"	$17.00
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#1359	SPIRAL UPCUT - 1/4" Diameter (solid carbide)	1/2"*	$12.00
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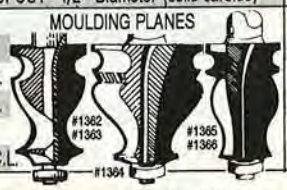
#1365	1" C.L.	1/4"	$31.95
#1366	1-11/16" C.L.	1/2"	$31.95



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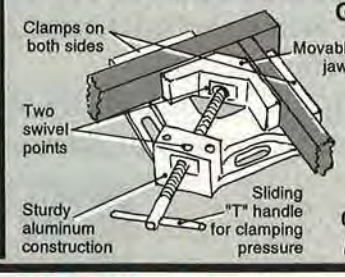

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MADRONE

A show-off amidst the redwoods

When botanist Archibald Menzies first spotted what came to be called madrone at Port Discovery, California, in the spring of 1792, he was impressed. He dubbed the tree an ornament of the otherwise dark conifer forest that "...will at all times attract the notice of the most superficial observer." Later, naturalist John Muir likened the standout madrone to a lost wanderer from the magnolia groves of the South. Both observers were accurate. Madrone—with its smooth, orangish bark, green leathery, magnolia-like leaves, and spreading countenance, appears quite dissimilar from its towering neighbors. And its wood stands alone, too.

Woodworkers familiar with madrone cringe at the thought that the wood once was sought solely as the most suitable source for charcoal to produce gunpowder. That's because madrone proves to be a handsome, fine-textured furniture- and cabinet-class stock that produces a luster few woods can match. To the joy of woodturners, madrone readily burls when it grows in areas that give it the opportunity for its branches to spread.

Wood identification

Madrone (*Arbutus menziesii*) is sometimes called madrona or madrono, and scientifically is always preceded by the word Pacific. That's because there's a Texas version of the species, and a Mexican one, too. But most of the madrone you see as woodworking stock and veneer comes

Natural range

from a range that extends from southern British Columbia down to California's central coast.

In that coastal band, you can find madrone everywhere there's a forest, and in nearly any size. In rugged mountain terrain madrone may only reach shrub size. In rich soil among the redwoods, the tree may attain 100-foot heights and diameters of 2-4'.

Just like the early explorers of the Pacific Coast, you won't have difficulty picking out madrone from the other forest trees. Unless you discover a very old, graying tree, its bark will be smooth and orange-colored. In May and June, clusters of white flowers hang amidst the leathery dark-green leaves (that only fall when new ones grow, so the tree always appears green). Later, the flowers turn to orange-red, berrylike fruits, presenting a colorful show.

Madrone's heartwood is a pale reddish brown, somewhat resembling apple wood, while its sapwood appears cream-colored. The fine-textured, dense, hard, and heavy wood (about the same as maple) has an irregular pattern of growth rings that presents an attractive pattern.

Uses in woodworking

Because of its texture and frequent burls, madrone has become the woodturner's darling for everything from bowls to lamps and novelty items. It was once used for the bowls of smoking pipes, too.

The wood rates as a first-class furniture stock, also. Veneer manufacturers like madrone's exquisitely figured burls. Their product becomes inlays and marquetry.

Availability

Unfortunately, madrone in lumber form is a rare commodity unless you live on the Pacific Coast, where its cost may rival the $4 or more per board foot of walnut. Figured boards may cost four times that. Veneer suppliers normally carry burled madrone at about $2.25 per square foot. Mail-order sources catering to woodturners often carry turning blanks and blocks of madrone burl.

Continued

PERFORMANCE PROFILE

Burled madrone

madrone

(Arbutus menziesii)

If you harvest your own wood for woodworking stock—and live where madrone grows—air-dry this species slowly before any kiln-drying. If you don't, it warps and checks. Once dry, however, madrone becomes one of the stablest of woods. And, if you take the following advice, you shouldn't have any trouble working it.

Machining methods

- Madrone's hardness and density dull cutting edges, so use carbide-tipped blades and bits.
- Figured boards require a very slow feed into the planer, but never plane to exact thickness. Leave a little for sanding. If you don't, some tearout may occur.
- Madrone has fine texture and straight grain, and although it's not likely to burn easily, it is somewhat stubborn in parting. That means using a rip-profile blade with 28 teeth or less on your tablesaw or radial-arm to avoid tearout. If you still have difficulty, leave about 1/32" extra wood for a jointing pass to clean up the edge, especially if you're machining figured boards.
- Crosscut and dado madrone with the help of a backing board.
- Twist drill bits will surely wander on hard madrone, so always drill with bradpoints or spurred bits for a clean hole. Provide for a backing board to lessen tearout.
- To rout this wood cleanly, take shallow passes with sharp bits. For cross-grained routing, rely on the backing board again.
- You can sand madrone to mirror-like smoothness, but be sure to use progressively finer paper and don't skip a grit or you'll develop finite scratches.
- Madrone's density definitely means predrilling for screws, then lubricating them with beeswax before driving.
- The wood's density also means special treatment when gluing to avoid joint slippage. Use a dark-shaded glue so that any squeeze-out won't show, and make sure that it has a long open time. Doing this allows you to put down a lighter coat, then briefly join the pieces before pulling them apart. Let the glue set up, then reassemble the parts.
- Select any stain and clear finish you prefer. Madrone accepts them all well.

Carving comments

- Madrone discourages hand-tool carvers. Power carvers with carbide-tipped cutters generally shouldn't have any trouble.
- Beware the switching grain direction of figured madrone because it tears out. Best bet: Start with medium-cut burs, then change to finer ones.

Turning tips

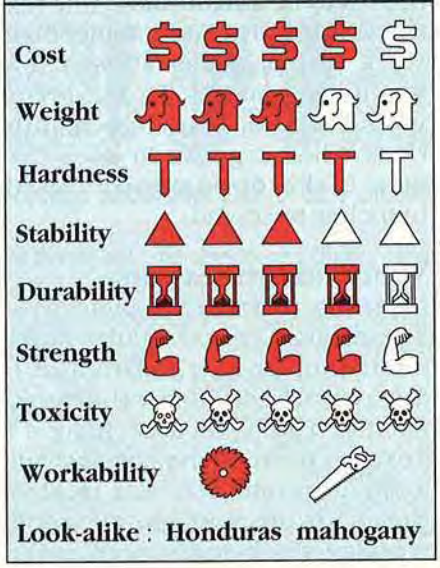
- You won't have problems turning madrone, as long as you keep your gouges sharp.

SHOP-TESTED TECHNIQUES THAT ALWAYS WORK

Any exceptions—and tips pertaining to this issue's featured wood species—appear under other headings elsewhere on this page.

- For stability in use, always work wood with a maximum moisture content of 8 percent.
- Feed straight-grained wood into planer knives at a 90-degree angle. To avoid tearing, feed figured or twisted grain at a slight angle (about 15°), and take shallow cuts of about 1/32".
- For clean cuts, rip with a rip-profile blade with 24-32 teeth. Smooth cross-cutting requires at least a 40-tooth blade.
- Avoid using twist drills. They tend to wander in the wood and cause breakout. Use a backing board under the workpiece to reduce tearout.
- Drill pilot holes for screws.
- Rout with sharp, preferably carbide-tipped, bits and take shallow passes to avoid burning.
- Carving hardwoods means fairly shallow gouge bevels—15 to 20°—and shallow cuts.

MADRONE AT A GLANCE



Compiled with woodworkers Bill Boyk and Dennis Jenkins Illustrations: Steve Schindler

A RIVER RUNS THROUGH THEM

Print this article

Vermont boasts some of New England's finest trout streams, so why shouldn't magnificently carved coffee tables featuring swimming trout spawn there, too?

Continued on next page

A RVER RUNS THROUGH THEM

Bill Herrick came to Manchester, Vermont, from New York City 21 years ago to carve. And he does, producing a line of the most unusual and eye-catching carved coffee tables ever to grace a den, living room, or family room. But during fishing season, when the afternoon sun sets just right in the sky, you'll more likely than not find him wading the nearby Battenkill River, fly rod in hand, in search of the elusive trout.

Not that the 68-year-old carver suffers from any lessening interest in his work after all the years. On the contrary, his varied designs are now more popular than ever. He's probably never been more excited about what can be coaxed from basswood, yellow poplar, and even marble. In fact, Bill's frequent quests for trout turn out to be an integral part of his work—and his success.

"You see, the trick is not to imitate nature perfectly. People don't want that," says Bill. "People want an interpretation. That's why I am not slavish about the details on our rocks, trout, and so on. Because, in fact, they're not rocks and trout. They're wood. Allowing the carving to be creative—to have spontaneity and freedom—is really what appeals to people about the tables."

And it's from the Battenkill and other trout streams across the nation that Bill draws the inspiration for his interpretations. His search for trout enables him to invite others eyes into his carvings so that they replace his experiences with theirs as they visually wander the stream bed.

"They're like good pieces of art," Bill continues. "The carved tables don't tell you everything. Instead, they encourage you to wade in there with your mind."

The lifestyle exchange: Manhattan for Manchester

It was Bill's trout and salmon fishing adventures that led him to the carved "trout" tables. That is relatively recent history, though.

In the early 1970s, Bill was a successful advertising executive. He and his partners owned a Manhattan agency that billed millions annually. Back then, Bill had thought—along with others of his generation—that the success defined by money, power, and growth meant happiness. Yet to him, that was proving to be a faulty defini-

"There's something fascinating about a big fish in a pool," says carver Bill Herrick as he shapes a block of yellow poplar with a gouge and mallet.

"They're like good pieces of art. The carved tables don't tell you everything. Instead, they encourage you to wade in there with your mind."

tion because the stress was overwhelming. So he and his wife, Phyllis Dunn, an executive with a cosmetics firm, decided to get out and seek contentment in the forested hills and quietness of Manchester, Vermont.

Bill had options. He could have become a scriptwriter. And he thought of opening an art gallery. But what he really wanted to do was carve wood. "I didn't have any practical training. In fact, I knew little of the necessary tools and started with a set of carpenter's chisels from the hardware store," Bill recalls, not without some amusement at the thought.

After some whittling and experimenting, his first real carving was a fish profile in walnut. It was a plaque, and a pretty good one for a novice. "But it was a dead fish," he remembers, "and I wanted life." Then came the discovery.

Turning the fish over in his hands, he looked at the carving from all angles until he saw it. The view he treasured most from those wild and tumbling waters that he skillfully maneuvered on his fishing outings was from above, looking down through the clearness. The perfect scene for a conversational tabletop! That realization happened 18 years ago.

Carving the tables proved painstaking work. It would take Bill seven weeks to rough out, detail, and stain one 41"-diameter table. Carved in one piece from solid, edge-joined, 6"-thick basswood planks and covered with a plate-glass top, a table would bring as much as $5,000. Anglers and non-anglers alike coveted them. But necessarily, the production was limited. In just under two decades, Bill managed to carve only 125 such tables. Then help arrived.

Carving out a partnership

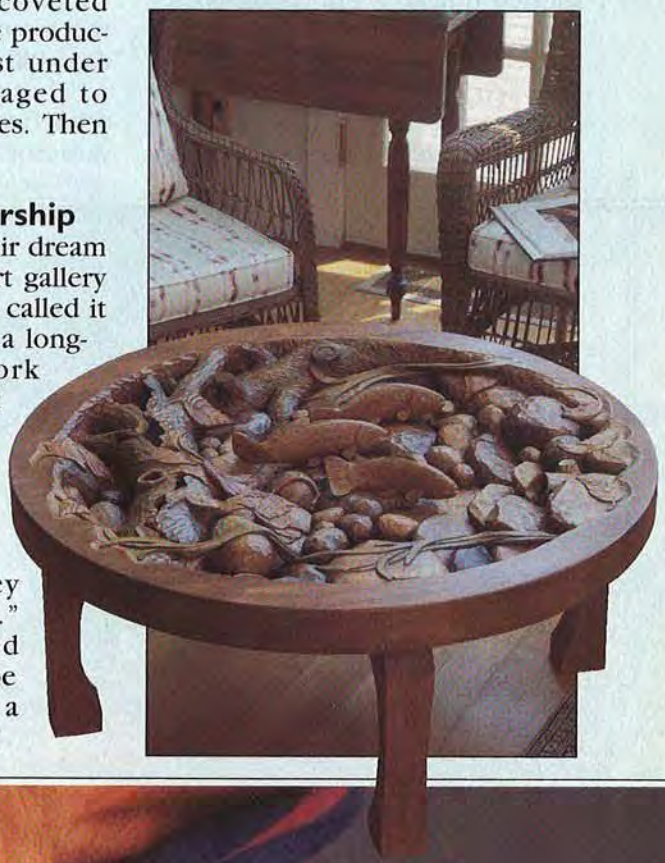
Bill and Phyllis turned their dream of owning a successful art gallery into reality in 1988. They called it Pierre's Gate in honor of a longtime favorite New York restaurant. It turned out to be Bill's studio, too, at first.

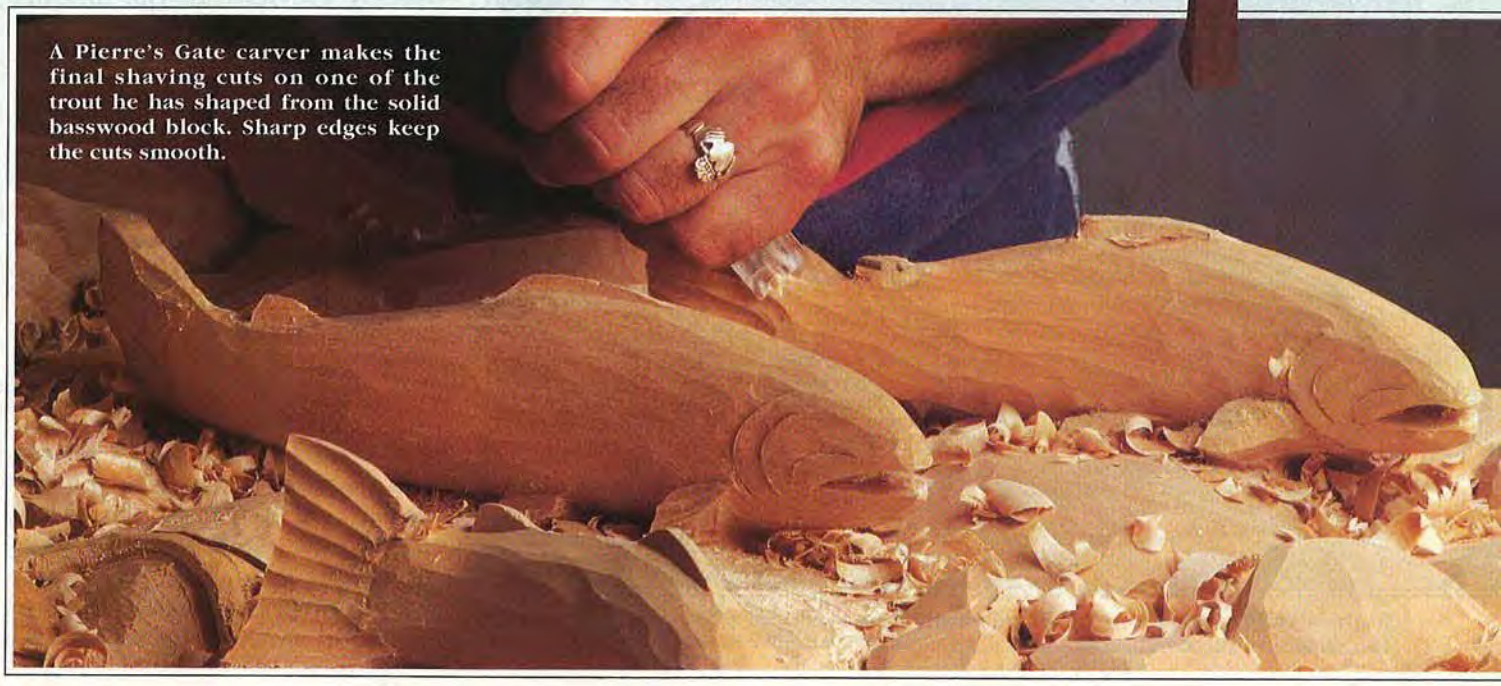
"I like to work in the morning," says Bill, "and if customers came by, it was all the better. They could watch me work." One of those interested onlookers turned out to be Ward Kane, the son of a good friend and neighbor.

According to Bill, Ward—also an ardent outdoorsman—was headed off to college, but he showed an interest in the carving Bill was doing. As it turned out, a career

Continued

All the details of logs, fish, and rocks found in a stream are represented in the carved coffee tables created at Pierre's Gate (glass top removed).





A Pierre's Gate carver makes the final shaving cuts on one of the trout he has shaped from the solid basswood block. Sharp edges keep the cuts smooth.

born in the halls of education wasn't exactly Ward's cup of tea, even though he had earned a master's degree in geology. He liked working with his hands better, as he had done during summer apprenticeships.

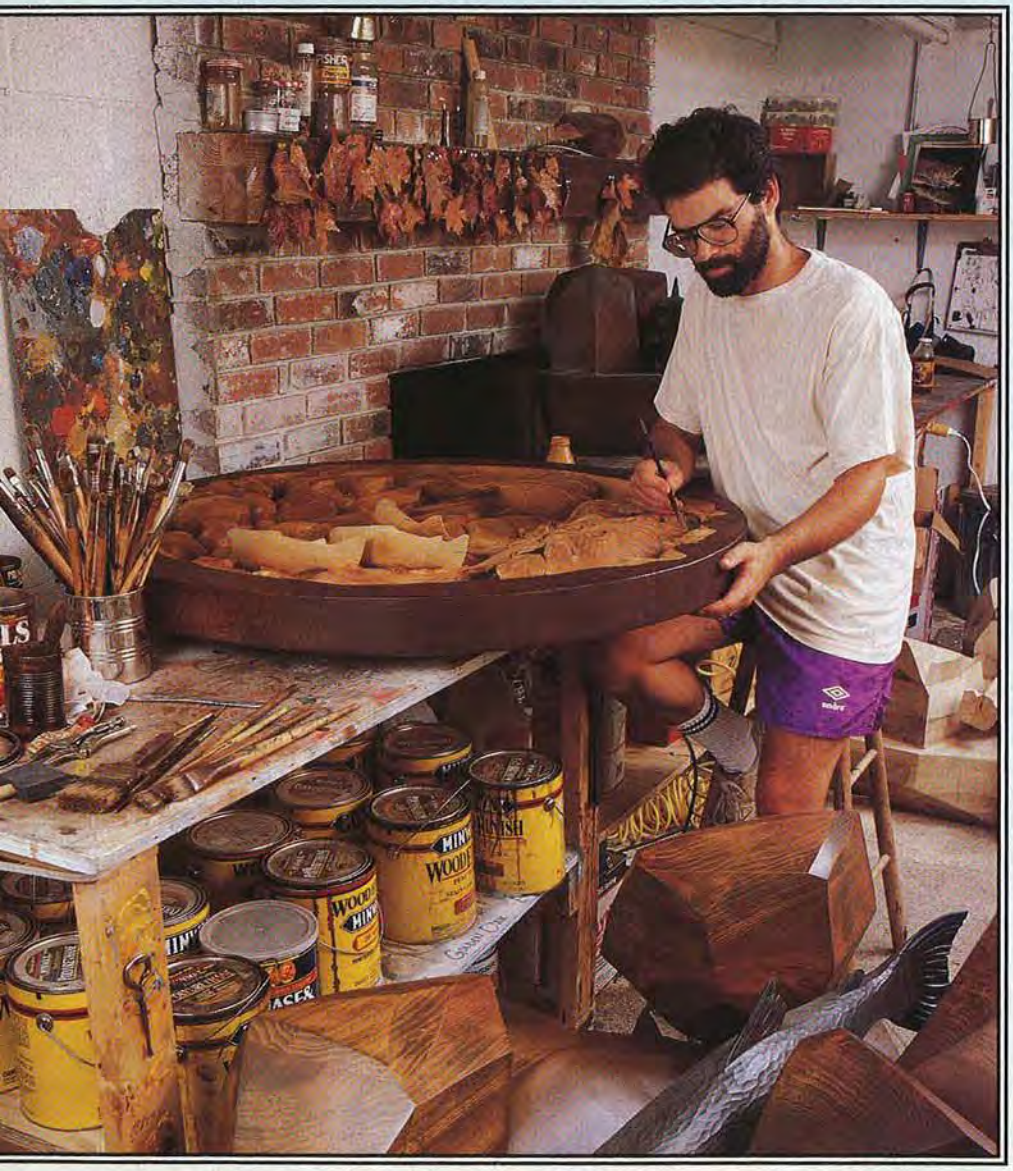
"Ward came to me after a few years and asked if he might carve fulltime," Bill recalls. "And he learned quickly." He added something else, though, a keen marketing sense.

Ward asked Bill why they couldn't shorten the seven weeks it took to carve a table from scratch by farming out the rough-in work and focusing on the details and the staining. As a result, the pair scoured New England and the East Coast for a subcontractor reliable and skilled enough to rout freehand from a template. In Pennsylvania they found one, and at the same time launched Pierre's Gate Designs, a company that makes and markets the trout tables on a scale larger than Bill had ever imagined.

"That was in 1990," says Bill, who became the firm's creative director while Ward assumed its presidency. The team also rented a building in the town's industrial park, and set out to hire some young craftspeople and train them to carve. Today, Pierre's Gate Designs has six carvers, a staining specialist, and two woodworkers to assemble and finish the tables. And production has risen to 350 tables a year.

"We are what I like to refer to as a virtual reality company," Bill explains. "Ward and I design the tables, we then subcontract some of the work, and retain inhouse the fine craftsmanship of the detailed carving and finishing. That way, we can spend more time marketing and at the same time ensure product quality."

Rising production also has meant the ability to sell to furniture stores, designers, and other retailers. "We now get about $4,500 retail for a standard trout table," Bill adds, "but there are many more of them." Each model in the line, though, is legitimately one-of-a-kind, though, and each is chronologically authenticated as to its order of completion.



In the staining room, Ken Fisher mixes different colors of oil stain to get the perfect shades in the scene.

Tables aimed at the sporting crowd

Although visitor's to Pierre's Gate quickly gravitate to the unique, carved tables created by Bill, Ward, and their carving associates, Bill likes to point out that he strives for a well-rounded creative life. "I write a weekly column for the local newspaper, and I've written two books of poetry," says the carver. "I also like to sculpt in stone, and still produce an occassional documentary film, commercial, or plan a trade show."

Bill's original trout table even today heads the Pierre's Gate lineup,but there have been some innovative additions, too.

The salmon table (see *page 40*), carved not as a tabletop but a stand on which to place the glass, depicts a large fish in a pool defined by boulders. It's carved in basswood and yellow poplar, and

available in marble. Price? $5,600 in wood, $10,500 in marble.

Then there's the sculpted trout table, a design that features a base of large basswood rocks sheltering a trio of rainbow trout. That sells for $3,500; fitted to a brass base, it costs $3,900.

Bill and Ward collaborated on the design of a hunter's table, shown *right*. It contains a detailed deer rifle and a shotgun, complete with checkered stocks and engraving, confined in a coffee-table frame of black walnut. The observant won't miss the tracks of small game and an open shell box. The cost? A hefty $5,700.

Newest in their line of tables (at this writing) is a golf table, *below right*. Carved entirely from one piece of basswood (as are all the tables), it portrays a set of old Scottish clubs, a scorecard and pencil, and an antique golfer's glove, all lying on a neatly mowed green. To duffers who fail to flinch at rising green fees, it's possibly a bargain at $5,900.

Carving can be a knotty subject

"One of the things that you have to have to be a carver is courge," Bill continues. "Anybody can learn how to carve, but to be a good carver depends on courage, confidence, patience, a feeling for the material, and a sense of vision that holds you to it over a period of time. By that I mean the need to make something better than it has ever been done before." And those traits come to light when a carver meets adversity on a table.

"For instance, you obviously have to watch out for knots and other defects when carving these, but you shouldn't be afraid of them," Bill advises. "When I was carving them alone, I would look for imperfections in the wood, and put them right in the middle so that I was forced to deal with them. I had to integrate the defect into the design, by maybe putting it on a submerged log."

Pierre's Gate's carvers must also be able to read grain, according to Bill. "When you're working on such a large block of wood, made up of separate pieces glued up, you can't place a trout on a glue line. It should flow with the grain. A carver must read the block carefully. Even though there's a pattern to follow, the carver must calculate how to get there."

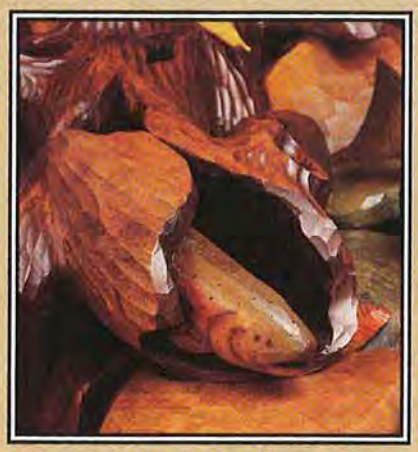
Early on in his table carving, Bill discovered that he had to deal with wood movement, too. "When you remove a whole lot of wood from the center of the block, you relieve the stress that held it togther," he says. "So unless you do something for stability, the piece will cup." Bill's solution was to run the hardwood frame of the table cross-grain to the basswood top, then screw it securely in place at several points.

"Of course, when you're dealing with something like a leaf stem that's as tiny as a toothpick, there's breakage, too," notes Bill. "But with the right tool, and the right direction, even these can be done. Again, that's where courage and confidence come in. And, if you break something? After all, what we're looking at on these [trout] tables is an underwater scene filled with debris. If you break a twig, make two twigs. If you knock off a leaf tip, work it so that the break looks natural!"

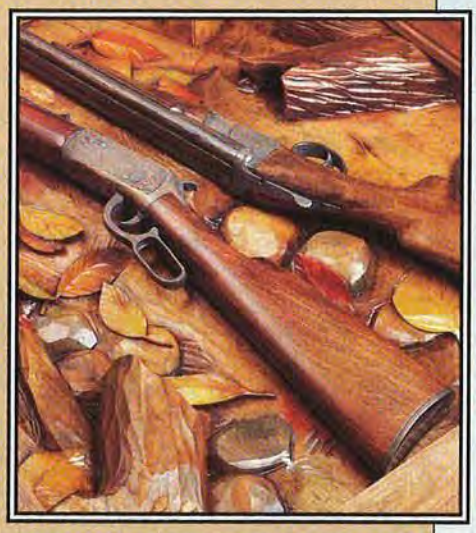
What about sanding? "Never. The gouge and chisel marks give the tables real personality," Bill emphasizes. "And that's what makes them sell."

Carving classes, stores, and galleries

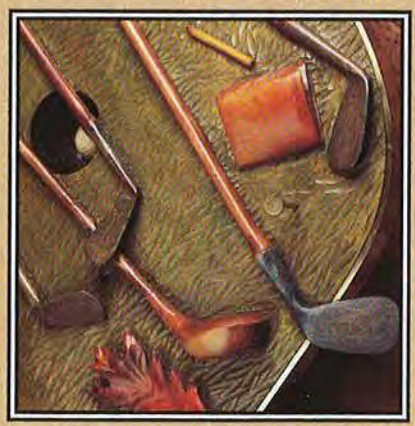
For information on Bill Herrick and Ward Kane's upcoming carving classes, or for a list of stores and galleries that sell Pierre's Gate tables, write: *Pierre's Gate Carving Classes, Box 148, 554 Main Street, Manchester, VT 05254.*



In the table scene, a trout finds a hiding place in a hollow log, just as it would in a real flowing stream.



The hunter's table, with a price of $5,700, was Bill's first diversion from a stream scene. Note the fine checkering on the gun stocks.



The clubs on the golf table seem inviting to pick up, but as with all Pierre's Gate tables, they're carved from one big block of basswood.

Written by Peter J. Stephano Photographs: Steve Uzzell

DETAIL SANDERS

Star performers

How a power tool saved my marriage

OK, so maybe my marriage would have survived even if detail sanders never had been invented. But without one, I almost certainly would not have completed the restoration of my wife's prized antique oak commode, shown *below*.

You see, I had reached the point in the refinishing process where only a thorough sanding would remove the remaining traces of paint and grime. As is my custom, I put off hand-sanding the project's many corners and crevices for quite a while. Fortunately, testing for this article got me back on the refinishing track and I used the detail sanders to complete the task lickety-split. Now, I'm happy and so is my better half. What more can you ask of a power tool?

Bill Krier

Bill Krier
Assistant Managing Editor

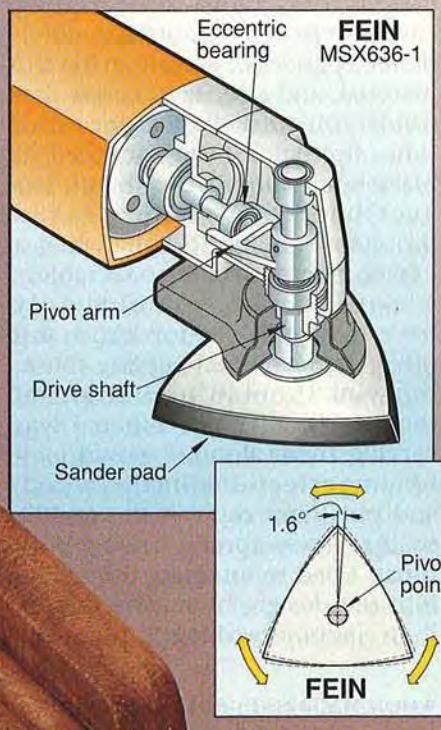
A quick look at the detail-sander market

Choosing a detail sander that's right for you should be a simple matter after reading this article. Unlike other categories of portable power tools, which offer dozens of models, often in a narrow price range, the detail-sander market consists of five products separated widely by price. Ryobi, for instance, offers two tools priced at about $45 and $75; Bosch has two similar models (one has variable speed) for $80 and $95; and the Fein sander runs $195 or so. The Bosch B7001 and Ryobi DS2000 came off the assembly line just as this article was in its final stages of preparation. To see what these models look like, and to find out more about how they performed in our tests, flip to page 46.

3 mechanisms, 3 levels of performance

Each sander in our test performed differently because of contrasting mechanisms for driving the sanding pad. Not surprisingly, we found the sturdiest, smoothest, and best-performing mechanism on the Fein sander. This tool has an eccentric shaft that makes a pivot arm move back and forth, causing the pad to oscillate. Because the pivot point is located directly above the center of the pad, the amount of oscillation is equal on all three corners of the pad. So, each corner of the abrasive wears equally.

The Ryobi DS1000 also has a pivoting arm, but with a pivot point located behind the pad. This causes the front corner of the pad to oscillate more and to sand with more aggressiveness than the back corners. We also noticed this trait with the Ryobi DS2000, even though this machine's oscillating



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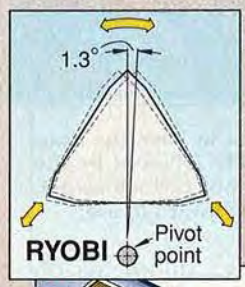
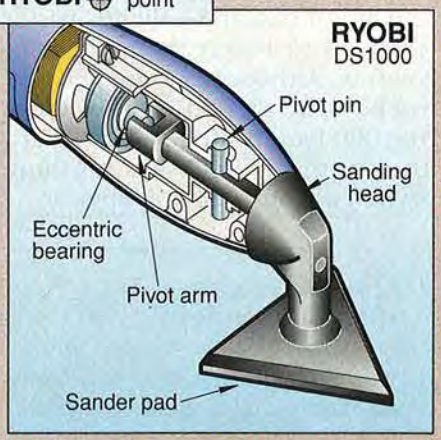
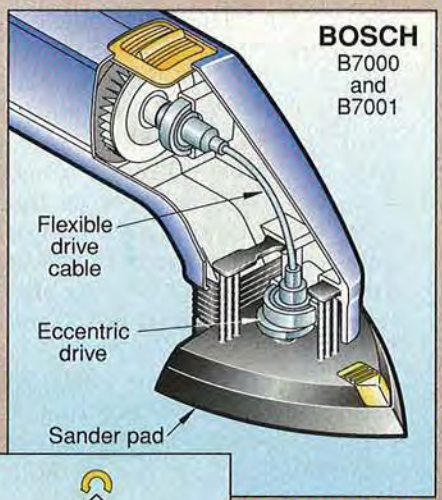
in corners and other tight places

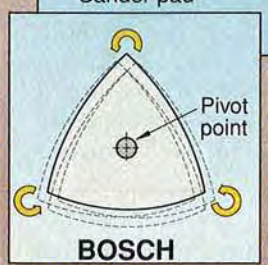
mechanism does not resemble the inner workings on the DS1000. (The DS2000 was produced too late to have a cutaway drawing shown with this article.)

The Bosch B7000 and B7001 operate altogether differently, with a pad that moves in a 1/16"-diameter orbit, like the pad on a 1/4-, 1/3-, or 1/2-sheet finishing sander. Because of this motion, the pad removes stock with equal aggressiveness over its entire surface. So, that the entire pad wears at the same rate.









3 key measures of performance

In our tests we rated the five sanders as excellent, good, fair, or poor in three areas: stock-removal aggressiveness, control, and vibration. (See the chart on the *last page* of this article for the ratings.) Here's a look at how each machine fared in these areas:

• ***Stock-removal aggressiveness.*** The Fein sander removed stock at a faster rate than the Bosch and Ryobi units. To increase the rate of stock removal with all of the machines, we applied heavy hand pressure while sanding. The Fein and Ryobi units seemed to maintain their oscillating speed despite this pressure. The Bosch's orbital action tended to stall under heavy pressure or when the edges of the pad made firm contact with perpendicular surfaces.

Because the Ryobi units concentrates their sanding action in the front tip, this area tended to load up quickly with sanding debris. And, unlike the other models, neither Ryobi has provision for rotating the pad, or easily removable hook-and-loop abrasives, to help make equal use of all three corners of the abrasive surface.

• ***Control.*** Here, too, the Fein came out an easy winner. Its pad did not wander when we moved it across a surface, and it sanded into corners and against perpendicular surfaces without damaging the adjoining stock.

At the other end of the spectrum, the Ryobi DS1000 pad seemed to want to take off in its own direction, and its edges hammered against perpendicular surfaces. This pounding rendered the Ryobi ineffective in corners and along edges.

The Ryobi DS2000 and both Bosch units stayed on course nearly as well as the Fein. The DS2000 also worked well in corners and along edges, with just a slight amount of hammering. The Bosches did not hammer corners and edges because they slowed down or stalled when we firmly applied the edges of the pad against perpendicular surfaces in corners and along edges.

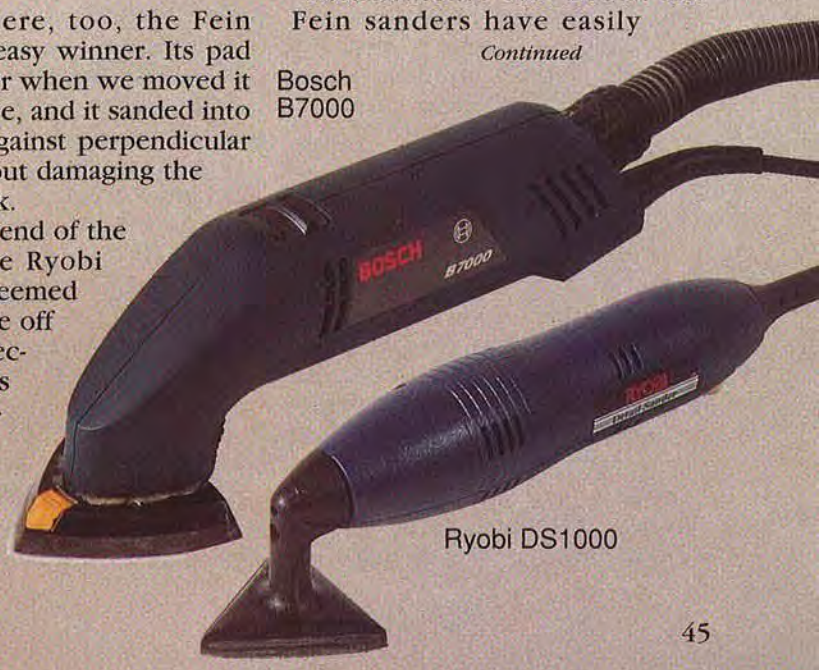
• ***Vibration.*** Once again, no contest. The Ryobi DS1000 vibrated so badly that it numbed our hands after only a minute. The Bosches and Ryobi DS2000 had much less vibration, but left our hands tingling after about 10 minutes. We used the Fein for 30-minute stretches with no discomfort.

What you need to know about pads

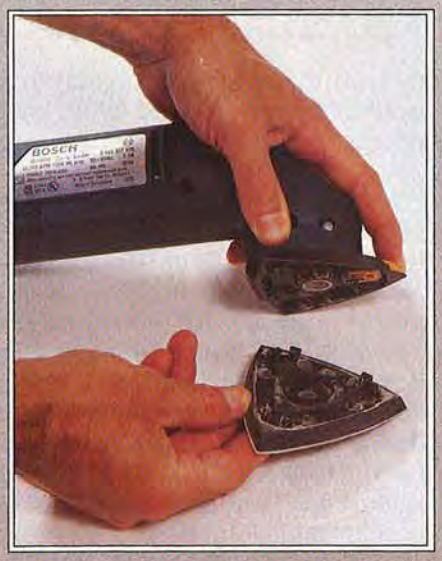
The pad of a detail sander takes plenty of punishment because the sanding action is concentrated over such a small surface area. Here are three features to consider before you buy:

• ***Attachment.*** The Bosch and Fein sanders have easily

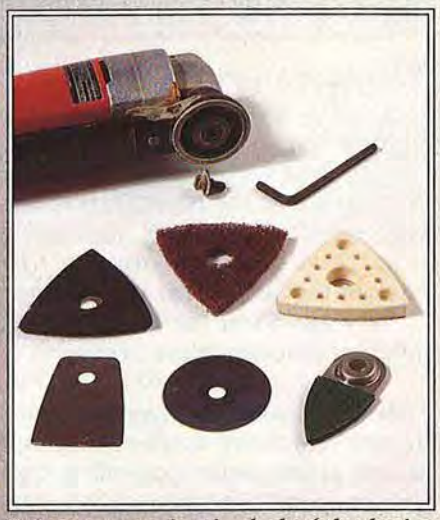
Continued



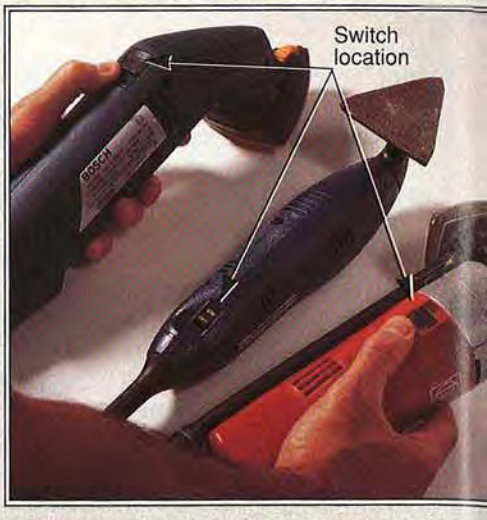
DETAIL SANDERS



To release the pad on the Bosch B7000, you simply depress a small button at the front of the tool.



Fein accessories include (clockwise from top left): soft-rubber pad, Scotch-brite pad, felt buffing pad, sanding finger for tight spots, circular saw blade, and scraper blade.



We judged the Bosch to have the best-located switch, closely followed by the Fein switch. The Ryobi DS1000 switch is hard to find and awkward to use.

replaceable pads. As shown in the photo *above*, you can change the Bosch pad without tools (the Fein requires a few turns of an allen wrench). The Ryobi models have fixed pads.

• ***Shape.*** As shown in the drawings on the *previous pages*, and the chart on the *next page*, each of the tested models have pads of various sizes and shapes. We maneuvered all of the models into corners with equal ease. The pad on the Ryobi DS2000 was especially handy for reaching tight spots because it extends 2" in front of the tool's housing. The Fein and Bosch units require that you add optional sanding fingers for hard-to-reach areas.

• ***PSA vs. hook-and-loop.*** The Bosch and Fein units come standard with pads that have a hook-and-loop system for attaching abrasives. The Ryobi pads accept only abrasives backed with pressure-sensitive adhesive (PSA). We prefer the hook-and-loop adhesives for fast, convenient changes, but they do cost a little more than PSA abrasives. If you want to save some money, the Bosch and Fein models have optional PSA-compatible pads.

Accessories galore

All of the tested models have optional accessories for buffing (felt pads), removing rust (Scotch-brite pads), and scraping (steel blades). The Fein has the most complete line of accessories, including the items in the photo *above*, and it is the only model that accepts a small sawblade. We had good success with the blade making cuts in solid wood, plywood, veneer stacks, and even fiberglass and sheet metal.

The Bosches have built-in dust ports for connection to a 1" optional Bosch hose and shop-vacuum adapter (about $25), and the Fein requires that you buy a dust-extraction kit (about $45). The kit comes with adapters for 27mm (1 3/32") or 32mm (1¼") hoses. A dust-extraction kit for the Ryobi DS2000 connects to a standard shop-vacuum hose, and costs less than $10.

Also, the Fein comes with a plastic carrying case. The Bosch and Ryobi models do not.

Switch type and location

As shown in the photo *above right*, both the Bosch and Fein sanders use convenient slide-type switches. We found the Bosch switch—positioned on the top of the motor housing—slightly easier to see and reach than the Fein switch. Although we judged the rocker-type switch on the Ryobi DS1000 hard to find and awkward to use, the DS2000 has a sliding switch as convenient as any.

The latest generation of detail sanders

Just a few years ago, your only choice in detail sanders was the Fein MSX636-1. It sold for about $300. Then, Ryobi blew the market wide open by producing a detail sander priced under $50—the DS1000. Despite its drawbacks (excessive vibration among them), the DS1000 served to sow the seeds for another generation of detail sanders. Our contacts in the tool industry tell us it also helped bring the price of the Fein machine under $200.

Shortly after the DS1000 arrived on the scene, Bosch came along with the B7000—a little more money, but a whole lot better. Recently, Bosch has come out with a variable-speed version—the B7001. Not to be outdone, Ryobi has debuted

FIVE DETAIL SANDERS: HERE'S HOW THEY RATE

MANUFACTURER/ IMPORTER	MODEL	PAD: STANDARD TYPE (1)	PAD: SIZE (2) (INCHES)	SPEED (3)	AMPERAGE	SWITCH TYPE (4)	DUST COLLECTION (Y) YES (N) NO (5)	PERFORMANCE (6): STOCK-REMOVAL AGGRESSIVENESS	PERFORMANCE (6): CONTROL (7)	PERFORMANCE (6): VIBRATION	OVERALL RATING (8): PERFORMANCE	OVERALL RATING (8): VALUE	OPTIONAL ACCESSORIES (9)	CORD LENGTH (FEET)	CORD MATERIAL (10)	COUNTRY OF ASSEMBLY (11)	LENGTH (INCHES) (12)	HEIGHT (INCHES)	WEIGHT (POUNDS)	SELLING PRICE
BOSCH	B7000	H	3 5/8	13,000	1.1	S	Y*	G	G	G	8	8	BP, HL, PBP, SBA, SSSF, VH, VHA	8	R	S	15	4 3/4	2	$ 75
	B7001	H	3 5/8	6,500-13,000	1.1	S	Y*	G	G	G	8	8	BP, HL, PBP, SBA, SSSF, VH, VHA	8	R	S	15	4 3/4	2	95
FEIN	MSX636-1	H*	3 1/4	20,000	1.4	S	Y**	E	E	E	10	8	BP, DE, DSSF, ETP, EXTP, HL, PBP, SB, SBA, SSB, SSSF, VH, VHA	9	R	G	13 1/2	3 1/2	2.9	195
RYOBI	DS1000	P	2 7/8	7,600	.24	R	N	G	F	P	5	5	BP, PA, PBP, SBA, SSB	6	P	U	14	3	1.6	45
	DS2000	P	2 7/8	9,000-12,000	.3	S	Y***	G	G	G	8	8	BP, DE, PA, PBP, SBA, SSB	10	R	U	15	3	1.75	75

NOTES:

1. (H) Hook-and-loop system for securing abrasives.
   (P) Pressure-sensitive adhesive (PSA) system for securing abrasives.
   (*) PSA pads available as optional accessories.
2. Measured from point to point.
3. Fein and Ryobi speeds indicate oscillations per minute. Bosch speed is for orbits per minute.
   (*) variable speed (**) two speeds
4. (R) Rocker (S) Slide
5. (*) Requires you to purchase Bosch 1" hose and adapter for connection to your shop vacuum. Cost: about $25.
   (**) Requires you to purchase dust-collection kit consisting of a dust-port extension and adapters for connection to 27 mm (1 3/32") or 32 mm (1 1/4") vacuum hoses. Cost: about $45.
   (***) Requires you to purchase dust-collection kit consisting of a short length of small-diameter hose that adapts to a 1 1/4" shop-vacuum hose. Cost: under $10.
6. E Excellent
   G Good
   F Fair
   P Poor
7. E Little effort required to maintain direction or location of sanding pad.
   G Some effort required to maintain direction or location of sanding pad.
   F Sander chatters against edges and vibrates, making it hard to control.
8. Based on a 1-10 scale with 10 being the highest possible score.
9. (BP) Buffing pad (compressed felt)
   (DE) Dust-extraction kit
   (DSSF) Double-sided sanding finger (pad extender)
   (ETP) Extra-thin pad
   (EXTP) Extra-thick pad
   (HL) Hook-and-loop pads and abrasives
   (HS) Hard and soft pads
   (PA) PSA pad and abrasives
   (PBP) Plastic-backed pad
   (SB) Sawblade (2 1/2" diameter)
   (SBA) Scotchbrite abrasive
   (SSB) Steel scraper blade
   (SSP) Super-soft pad
   (SSSF) Single-sided sanding finger (pad extender)
   (VH) Vacuum hose
   (VHA) Vacuum-hose adapters
10. (P) Plastic
    (R) Rubber
11. (G) Germany
    (S) Switzerland
    (U) United States
12. Measured from tip of pad to rear of tool.

the DS2000—a vast improvement over the DS1000 and priced to compete with the Bosch models. The new Ryobi has two speeds (low speeds give you greater control over delicate stock removal).

To add to this competitive atmosphere, Skil will introduce a $40 detail sander in January. It will have two speeds, dust collection, and a rotating hook-and-loop pad. We'll test one ASAP.

Bosch B7001

Ryobi DS2000

Our recommendations

After using these tools, our staff was divided into three camps. Those who feel they will get a lot of use from a detail sander said they have no qualms about spending nearly $200 for the Fein sander. The others, depending on personal needs, were split in choosing between the Bosch B7001 and Ryobi DS2000.

MANUFACTURERS' LISTING:

Bosch
312/286-7330

Fein
800/441-9878
412/331-2325

Ryobi
800/525-2579

Written by Bill Krier
Technical consultant: Dave Henderson
Illustrations: Kim Downing
Photographs: John Hetherington

The *WOOD*® guys bag some trophy stock

Unloading the solar wood-drying kiln provided some pleasant surprises, and a few lessons, too.

Like fishermen displaying their catch, Jim Downing, Pete Stephano, Larry Clayton, Jim Harrold, and Bill Krier line up their 50% share of the stock.

Time flies by in the publishing business where one issue deadline tails another. So last June, when friend Greg Wood phoned to remind us that we were long past due to unload our wood from the solar kiln (see "*WOOD* Magazine Builds a Solar Kiln," June 1994), we jumped to it. All the staff members who helped log and saw that 614 board feet of ash, cherry, and walnut over a year ago ("The *WOOD* Gang Goes Logging," *WOOD* magazine, December 1993) headed for the kiln site on Greg's farm south of Des Moines. In order to haul the wood back (as the landowner, Greg got 50% of the boards), a couple of us drove our pickups.

Unloading the bone-dry stock (it read an overall 6% moisture content on the meter, with 6-8% being ideal) mostly consisted of pleasant surprises. But we did find out a few things.

Strive for a perfect stack

Unlike stacking a cord or two of firewood, green boards require more than a little extra attention when it comes to building up a pile in the kiln. For instance:

- Fill the kiln to capacity (a smaller load will dry too rapidly), and plan the stack to allow for 12" of air space on all sides.
- Never, never, use green stickers to separate the board layers. We had sawed up a small hackberry log into stickers 1" thick and 1½" wide and long enough to span the expected stack. The green hackberry changed shape in the drying process and probably allowed the boards some movement, too (some beautiful ash had slight cupping). So always use stickers cut from dried hardwood.
- Place stickers as close as possible to the ends of the boards, and coat the board ends with paint (we used latex). With this, our boards had minimal end checking.
- Place the wettest wood (in moisture content) toward the bottom and in the middle of the stack so that it won't dry too rapidly. Our ash was toward the top and outside and displayed practically the only checking and warp we encountered. On the other hand, the walnut boards were on the bottom and turned out perfectly. The denser cherry showed little stress no matter where it was.
- Completely cover the top of the stacked green boards with plywood painted black on the top side, and sticker it, too. Then, *weight* the covering with scrap iron or concrete blocks to keep the top layers from warping.
- To continue storing the dry stock in the solar kiln without damaging it, maintain the kiln temperature at not more than 15° above outdoor temperature (compared to a temperature of 30° above when drying) by covering most of the solar panel and adjusting the vents.

—Peter J. Stephano, Sr. Editor

Build your own solar kiln

For complete plans and a materials list for a 1,000 board-foot-capacity solar kiln, send your check or money order for $9.95 ppd. (U.S.) to: *Kiln Plans,* WOOD *Magazine, 1912 Grand Ave., Des Moines, IA 50309-3379.*

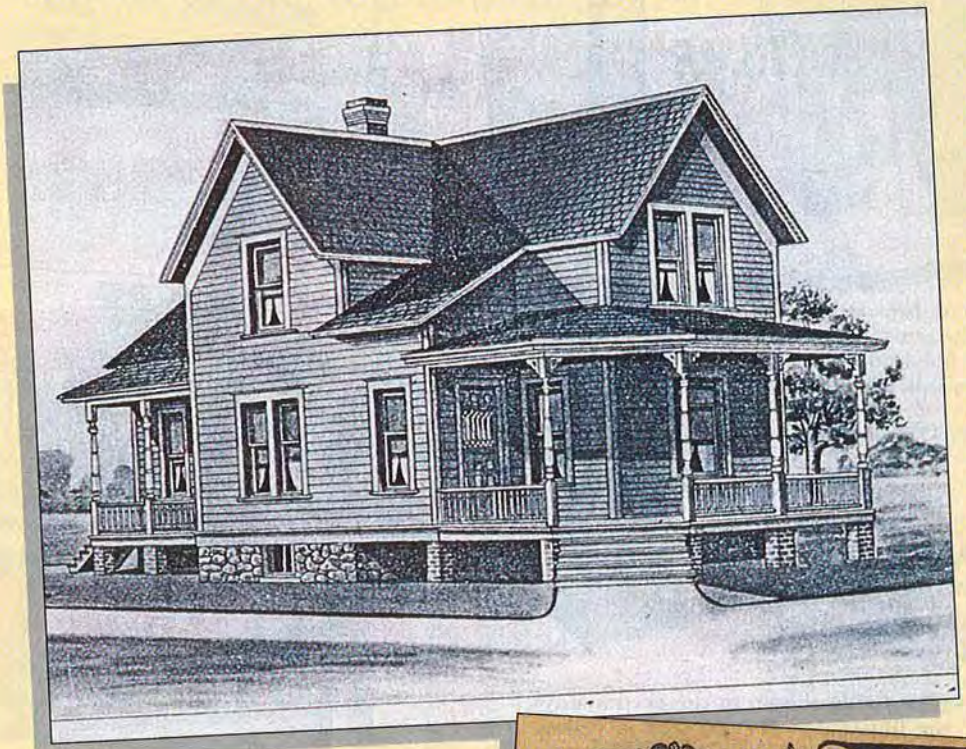
Bill Krier, Jim Downing, and Jim Harrold like what they see as Greg Wood passes them ash, cherry, and walnut boards from the kiln to stack in the trucks.

Ah, those were the days!

WOODWORKING TRIVIA *(from way back when)*

I really didn't know what to expect when I walked into the Sears headquarters building in suburban Chicago that cold winter day this past January. Would a look through the Sears archives yield a treasure trove of information that would be of interest to *WOOD*® magazine readers? It didn't take long to find out. In a few short hours, I was treated to a fascinating glimpse into the woodworking world of yesteryear through the pages of various Sears catalogs. Here's hoping that you have as much fun as I did reading about how decidedly different things used to be.

Larry Clayton



You, Too, Can Have the 4-Bedroom, 2-Story House of Your Dreams!

"$1,525.00 Will Build This LARGE SEVEN-ROOM HOUSE. Complete, ready for occupancy, providing you use our free building plans, specifications, and bill of materials."

Source: *Sears BOOK OF MODERN HOMES, Spring 1908*

Editor's Note: Sears sold kit homes to the general public from 1908 to 1937. The company offered about 450 plans and sold over 100,000 homes! Sears also made loans to its customers, taking mortgages as security.

Print this article

Beautiful Chippendale-Style Dining Room Furniture Set—A Steal At Only $148.25!

"Out of the Golden Age of furniture craftsmanship (the Georgian Period of 1705-1779) comes this genuine old English design, reflecting the influence of a period which found expression in graceful cabriole legs and delicate artistry of line."

Woods, Construction and Finish---"The very beauty of this set is in the simplicity of its woods. The tops of pieces are five-ply walnut veneer; the fronts and ends are three-ply veneer. The parts not veneered are of gumwood, with exposed parts finished in walnut. The buffet and china cabinet have dust-proof partitions below the lower drawers. Drawer bottoms are beautifully veneered with mahogany."

Source: *Sears Catalog, Fall 1928*

Editor's Note: You'd pay a king's ransom for this 10-piece set of furniture today. Average cost per piece in 1928: $14.83! How times have changed.

Continued

Smart, Stylish New Sets
A Royal Set That Every Home Can Now Afford
Out of the Golden Age of furniture craftsmanship (the Georgian Period of 1705-1779) comes this genuine old English design, reflecting the influence of a period which found expression in graceful cabriole legs and delicate artistry of line. Still it has a
Fancy pendant pulls. Strongest of braced construction throughout. A set reliable in every respect.
The Buffet is furnished in choice of two sizes, 60x22 inches and 66x22 inches. Has velvet lined silver tray in top drawer.
Beautiful Chippendale
Unto the most minute detail, this set is Chippendale. Patterned from an original by the master whose influence was so strong in English furniture design during the

WOODWORKING TRIVIA

Doors, Windows, and Millwork Galore—At Bargain-Basement Prices

"Our Veneered Hardwood Doors are superior to doors made of solid hardwood. Solid oak or birch doors, although from select stock, in no way compare in beauty with our rotary-cut veneered doors. Veneered doors properly made with a good light wood core will never warp or crack and are much lighter in weight."

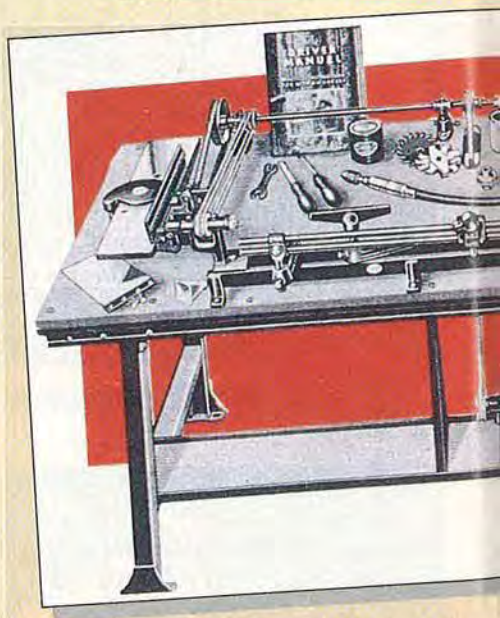
SUPERBA 1 ¾"-Thick Veneered Oak Door Glazed As Shown, 36" Wide × 84" High: $11.65.

"Our Colonial Built-Up Columns will not warp, swell, or check, being constructed to withstand the worst weather conditions.... They are thoroughly kiln dried." Colonial Pedestal Built-Up Columns, Lock Joint, No. 63C8085, 8' high, 6" dia. shaft (at base), clear in the white, $4.35.

"The Grille shown in the accompanying illustration is furnished in yellow pine, plain red oak, plain white oak, birch, and cypress, either in the white or varnished, in any opening up to 7 feet wide, all at the same price....The carvings and capital are made from composition and are highly ornamental." Price: $18.45.
***Source:** Sears Millwork Catalog, 1908*

Editor's Note: Following are prices for some other items from the same catalog:

1 3/16 × 2 ¾" Softwood Crown Molding, price per 100 feet: $1.02.
Quarter Round Molding: 25 cents per 100 [linear] feet.
Five-Panel Solid Yellow Pine Interior Door, 36" wide × 84" high, 1 ⅜" thick: $2.34.
Two-Light Check Rail Window, 1 ⅜" thick, glass size 12" × 20": 66 cents.
Plain Sawed Oak Flooring, clear grade, ⅞" thick 2 ¼" wide, per 1,000 feet: $58.50.



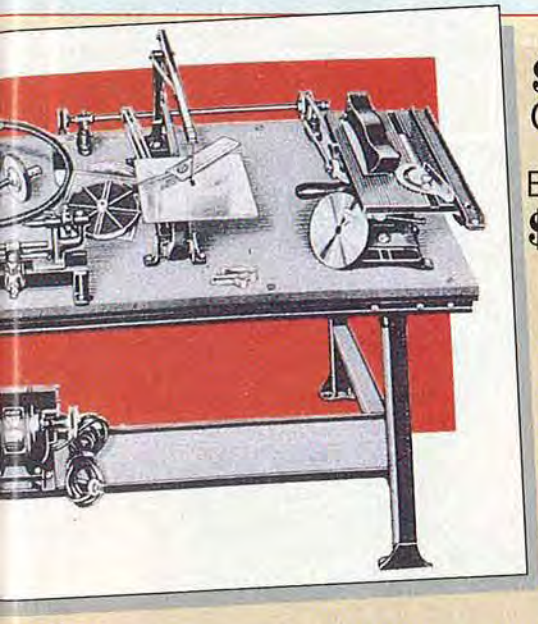
Every essential tool, ready to set up in your workshop and operate from ordinary house current! The 'DRIVER' outfit is especially designed for the home craftsman, but is strong and capable of turning out woodworking jobs of all kinds . . . and the price is so low!"

"Complete shop includes Lathe, Bench Saw, Planer, Jig Saw, Flexible Shaft, Dado or Groover, Flexible Coupling, Drum Sander, Glue, Manual, Shaft Hangers, Line Shaft, Work Arbor with 4" Grindstone, Pulleys, Belting, Work Bench, and ⅓ hp, A.C., 60-cycle 110 to 120-volt, heavy-duty type electric motor."

Every Self-Respecting Turn-Of-the-Century Do-It-Yourselfer Wanted To Own This.

"DO YOUR OWN CARPENTER WORK and save five times the cost of this outfit by keeping your property in perfect order, saving time and carpenter's and wagon maker's bills. The tools included in this set are needed in every family . . . WE PACK THEM IN A NEAT WOODEN BOX made with dovetailed corners, with hinges and hook."
Source: *Sears Catalog, Fall 1897.*

Editor's Note: All told, there were 22 different tools and "1 good carpenter pencil" included. Oh, I almost forgot—cash buyers could "deduct 3 percent, in which case $4.80 pays for the outfit." Average cost per tool: 22 cents.



$59.50 Cash
COMPLETE

EASY PAYMENTS
$13.00 DOWN

Honey, Guess What I Saw In the Sears Catalog? If We Buy It, I Can Build That Birdhouse You Wanted.

Source: *Sears Electrical Power Tools and Shop Equipment, 1931*

Editor's Note: Sears got into the home power-tool business in 1928. That turned out to be good timing because there was a large increase in do-it-yourself activity during the Great Depression. Lots of unemployed people purchased tools so they could build furniture and other items for sale.

The Craftsman brand name was introduced in this same year. In announcing it, the writers of the Spring catalog said, "You will find in Sears Craftsman tools the same unquestionable quality that is to be found in silver that is marked with the word 'Sterling'. The brand Craftsman means sterling quality in tools."

Anyone For a Genuine Imitation Stradivarius-Model Violin?

"LIBERAL TERMS. Send $1.00 with order and we will send any violin C.O.D. SUBJECT TO EXAMINATION. Pay balance if pleased; otherwise, send it back and we will cheerfully refund your money."

"No. 72500. This violin is a JUSTLY CELEBRATED MODEL, well made, well finished, and possessing a tone of surprising quality. Our special price . . . $1.75"

No. 72508. "The instrument is complete with best ebony fingerboard and tail piece, with finished neck . . . . We furnish the instrument complete with a full set of strings, and also include a most reliable and desirable Instruction Book. We also give free with the violin a very handsome violin bow."
Source: *Sears Catalog, Fall 1897*

800 lbs. of Pure Musical Enjoyment!

"Finest action . . . everything first class. We send free with every piano a handsome stool and instruction book.... rosewood, mahogany, or ebony finish. All for $121.25. Such was never known before."

"Our binding 25 years' guarantee by the terms and conditions of which, if any piece or part gives out by reason of defect in material or workmanship, we will replace it free of charge. This is the longest, strongest, and most binding guarantee given with any piano."
Source: *Sears Catalog, Fall 1897*

Written by Larry Clayton
Illustrations: Courtesy of Sears Roebuck and Co.

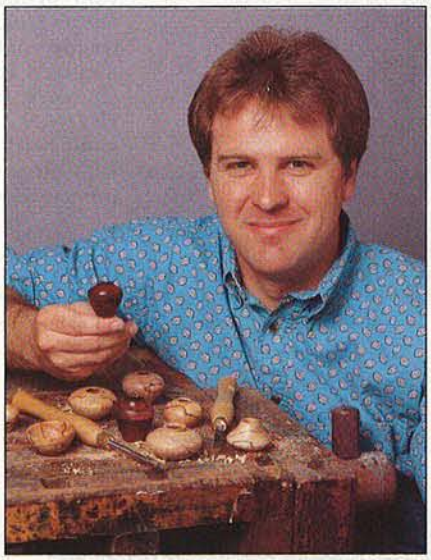
Follow my step-by-step formula for success

A TREASURE

Hey turners, are you looking for something neat to do with all those wood scraps too beautiful to toss, yet seemingly too small to serve any purpose? Faced with the same dilemma, I blew the dust off of my miniature turning tools and got busy. Not only was I able to shape a small-scale Southwest-style hollow turning, but I was able to do it in less than 15 minutes—start to finish. Now, after turning 100 or more of these little beauties, I thought I'd share my proven process with you.

Marlen Kemmet

Senior Editor/How To



Print this article

TROVE OF TINY TURNINGS

Cut the down-sized bowl blanks and mount them

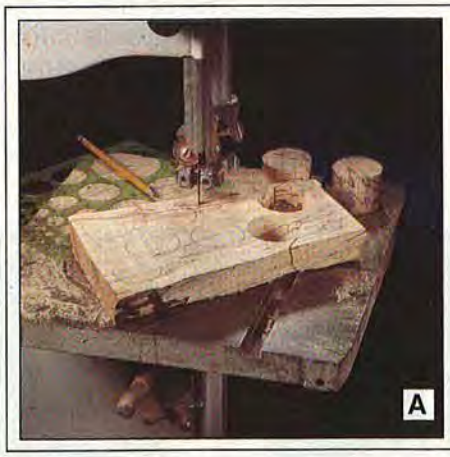
1 Using a plastic circle template (available at art supply stores) or a compass, mark circles about 2" in diameter on stock that's about 2" thick. (You also can laminate thinner stock to form the blanks.) My finished turnings shown *below left*, measure 1¼-2" in diameter and 1¼-1½" tall.

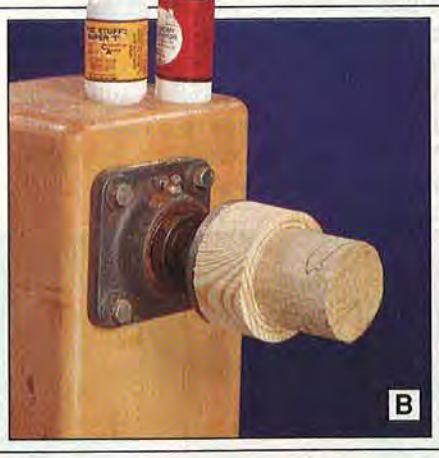
2 Fit your bandsaw with a ⅛" or ¼" blade, and cut the blanks to shape as shown in Photo A. I normally cut about 20 to 30 blanks at one time, and throw them in a plastic ice-cream pail.

3 To form an auxiliary wooden faceplate, trace around your 3" metal faceplate onto 2×4 stock. Bandsaw the stock to shape, drill pilot holes, and screw the auxiliary wooden faceplate to your 3" metal faceplate with #10×¾" sheet metal screws.

4 Center and adhere the round blank to the auxiliary faceplate, shown in Photo B. If you have trouble centering the round stock on the auxiliary faceplate, start the lathe and use a pencil to mark concentric circles on the face of the auxiliary wooden faceplate. Then, just center and glue the round blank in one of the circles.

While regular woodworker's glue will work, instant glue allows you to start turning within minutes instead of waiting overnight for regular glue to dry. For an immediate bond, I apply instant glue to the round blank and spray the accelerator on the auxiliary faceplate, and then hold the two pieces together. (See the Buying Guide at the end of the article for our source of cyanoacrylate adhesive, accelerator, and miniature turning tools.)


A


B

C

Let the turning begin

1 See the photo on the *opposite page* for some of my favorite Southwest-style shapes. It takes me two or three vessels to get the shape exactly as shown. But, once I've duplicated a shape successfully, I find it much easier to come back to that shape later and turn it to the proper proportions.

At a speed of about 1250 rpm, use the ¼" gouge to turn the blank perfectly round. Then, turn the end of the blank flat. With the miniature parting tool, make a parting cut into the side of the blank no more than ⅜" deep at least ¼" from the end of the wooden auxiliary faceplate. (Later, I'll use this ¼" of stock to form a jam-fit chuck for turning the vessel's bottom to shape.)

2 Mark a reference line on the blank at the point you wish to have the largest diameter. Then, as shown in Photo C, put the ¼" gouge to work to start shaping the bottom portion of the turning. Shape to the parting cut. *Do not* turn the bottom to final shape; leave it oversized. You'll need plenty of stock for support when turning the top and inside to shape. Turned too narrow, the tiny turnings will tend to snap off at the base.

3 Turning above the marked reference line, turn the top of the vessel to shape.

Continued

TINY TURNINGS

D

4 To hollow out the inside of the vessel, stick the point of the ¼" gouge directly in the middle of the turning. Push in lightly; the gouge will act like a drill bit to form an opening as shown in Photo D. Slowly, continue pushing the gouge straight into the round stock until you're about ¼" from what will be the finished inside depth of the turning. If you find this method a bit intimidating, you also can fit a ¼" drill bit into a chuck mounted in your tailstock and use this setup to drill the hole.

5 Enlarge the hole to ⅜" or ½" diameter. Angle the gouge slightly, and take light cuts to begin hollowing the inside of the vessel. Then, as shown in Photo E, come in at a sharp angle with a parting tool to clean the top inside of the turning. Use light pressure when shaping the inside of the vessel; if you push too hard, you're likely to snap off the turning at the base. For vessels with smaller openings in the top, see the instructions on *page 10* for information on making your own low-cost, bent-nosed scrapers. I turn the walls of my vessels to about 1/16" to ⅛" thick. You might want to leave yours a little thicker at first, making them thinner as you improve with practice.

6 With the inside hollowed to final shape, finish turning the base to shape. For an appealing shape, I like to make the bases about one third or less than the largest diameter of the turning. For example, a turning that's 1½" wide will have a ½"-diameter or smaller base. Turnings with wider bases look squat and bottom-heavy.

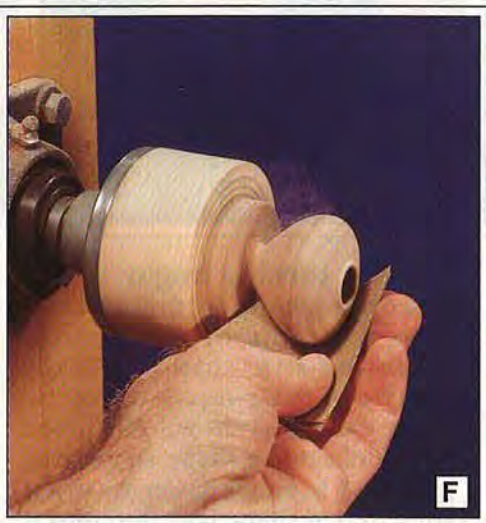
Sand it, finish it, and part it off

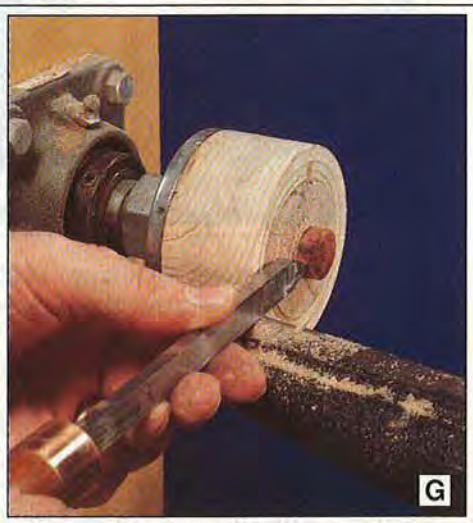
1 Using 150-, 220-, and then 320-grit sandpaper, lightly sand the exterior of the turning as shown in Photo F. Again, don't apply too much pressure or you could snap the turning at its base. For vessels (turnings with small opening at the top) I don't sand the interiors of the vessel. Bowls get both the inside and outside sanded.

2 There's little secret to my finishing process other than sanding to remove all marks and applying several coats of a fast-drying clear finish such as Behlen Master-Gel Clear Finish or Deft lacquer with a clean piece of cloth. To do this, I stop the lathe and use a small piece of cloth to apply the finish. I restart the lathe and hold a second piece of clean, dry cloth against the turning to create heat. This burnishes the piece and dries the finish immediately. Two or three applications of finish and the burnishing process is sufficient. For an even higher gloss, see the buffing system on *page 18*.

3 Hold the miniature parting tool in your left hand, and cup your other hand around the turning.

E


F

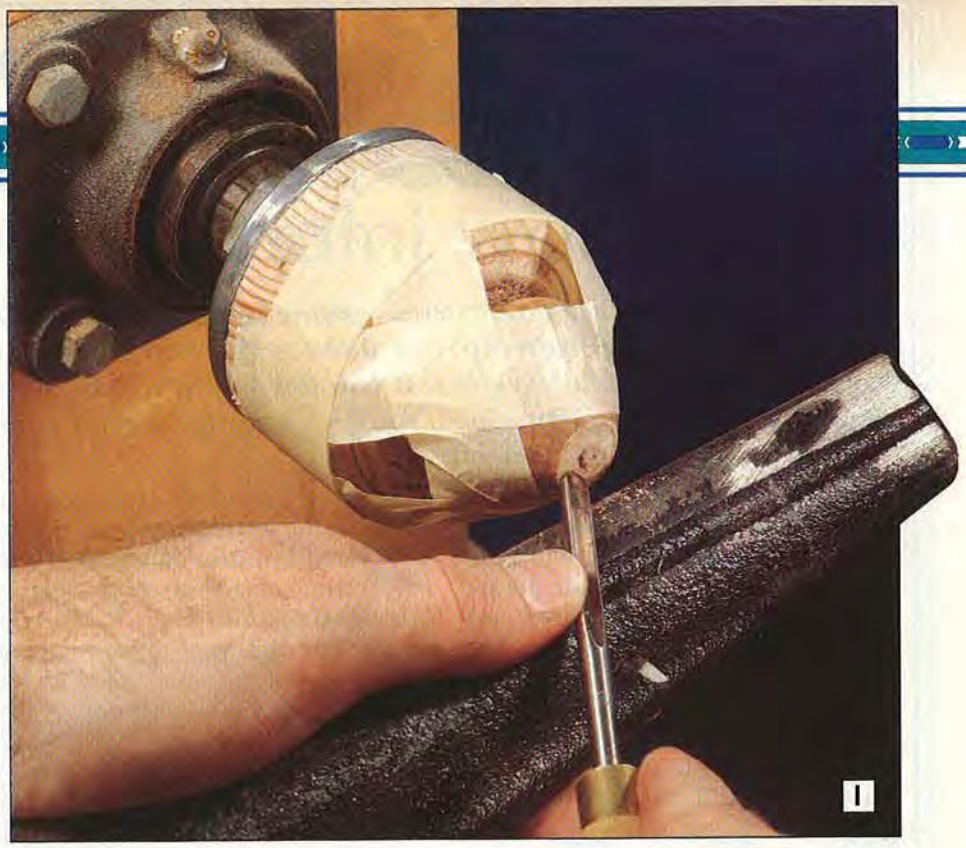

G

Now, part the turning with your left hand, and grab the vessel in the other. When parting the turning, angle your parting tool slightly to form a concave bottom on the turning. A turning with a concave bottom always sits flat. Note in Photo G how I left ¼" of scrap stock (the stock between the auxiliary faceplate and the parting cut made earlier) on the outside face of the auxiliary faceplate.

4 For a professional-looking bottom on your vessel, finish turning it on a jam-fit chuck. To do this, turn the ¼"-long nub on the end of the auxiliary faceplate to the same diameter as the opening of your turning as shown in Photo G. Reduce the tenon diameter slowly, and stop the lathe frequently to check the fit of the tenon in the opening in your turning. The turning should fit the tenon snugly as shown in Photo H.

5 It's easy to turn the tenon too small, resulting in a sloppy fit of the turning on the tenon. But, don't worry, I've got a quick fix. To adjust for this, wrap masking tape around the tenon until the turning fits snugly onto the tenon/tape.

H


I

6 Even if the turning fits snugly onto the tenon, you'll need to tightly wrap a piece of masking tape around one side of the turning and onto the opposite sides of the metal faceplate, leaving the turning's base exposed as shown in Photo I. Repeat this with two more pieces of tape. Now, wrap a piece of tape around the wooden auxiliary faceplate to secure the ends of the three pieces of tape to the auxiliary faceplate.

7 Remount the faceplate assembly to your lathe, and use the ¼" gouge to finish turning the concave bottom to shape as shown in Photo I. Be careful not to remove too much stock; it's easy to turn through the bottom of the vessel at this point. With the lathe running, sand the bottom concave surface smooth.

8 With an ultra-fine felt-tipped marker, initial and date the bottom of the turning. Remove the tape to separate the turning from the auxiliary faceplate. Add finish to the signed bottom and display.

To start the process over, simply use a gouge or parting tool to remove the stock still glued onto the end of the wooden auxiliary faceplate, and glue another blank to the auxiliary faceplate. This allows you to reuse the auxiliary faceplate almost indefinitely.

Photographs: John Hetherington

Buying Guide

Tools and adhesive. For turnings like the ones shown here (2" and less in diameter, I recommend the 5-piece Sorby miniature tools which sell for $69.95 ppd. For turnings in the 2-3" range, I recommend the slightly stouter 5-piece Henry Taylor miniature set for $61.95 ppd. Add $9.95 for a 2 oz. bottle of gap-filling cyanoacrylate, and $5.95 for a 3 oz. bottle of accelerator. Craft Supplies USA, P.O. Box 50300, Provo, UT 84605-0300, or call 800-551-8876 to order.

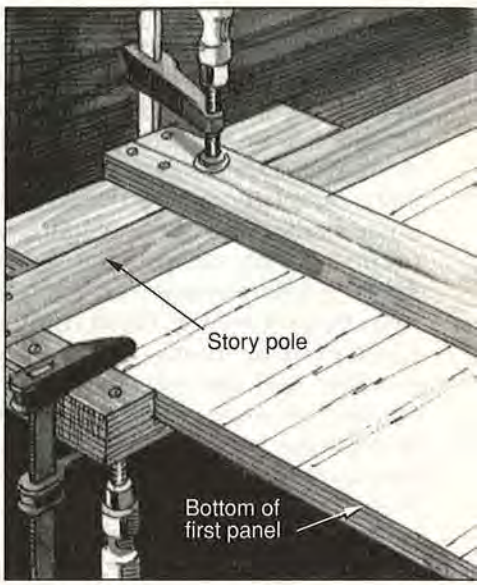
Develop Your Shop Skills

CONSISTENTLY

Must-know information for building

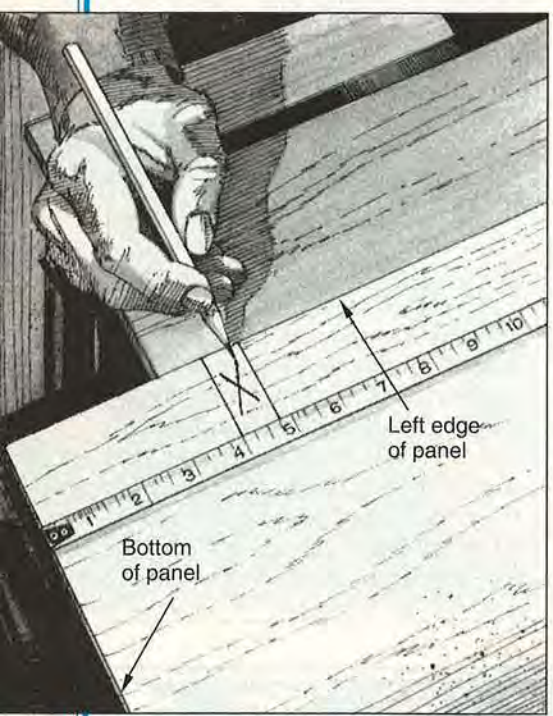
Many projects, such as the corner cabinet featured on *pages 72–78,* require precisely spaced dadoes in their sides for accepting shelves and dividers. If you need help in this area, you've come to the right place. Here's a surefire way of routing dadoes that align perfectly.

Print this article

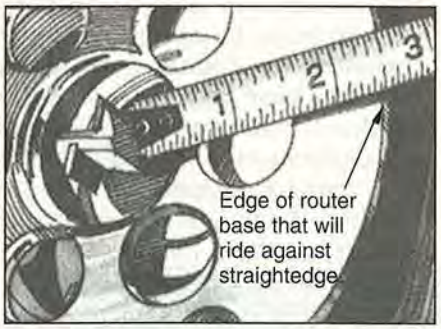


1 The secret to dead-on dadoes lies in using the straightedge and story pole shown in the "Great Ideas For Your Shop" article on *page* 16. We sized these for working with a ¾×48×96" sheet of plywood, but you can build yours smaller if you don't typically handle full-sized sheet goods. After making these fixtures, we'll show you how to use them in the following steps.

2 Mark the position of the dadoes on the face of the workpiece, along the left edge (as you stand at the bottom end of the panel). Measure from the bottom of the panel, and double-check your accuracy.



3 Using a straight router bit the width of the dado, adjust the bit for the correct cutting depth (one-third the thickness of your panel). Now, measure the distance from the bit's cutting edge to the edge of the router base as shown *below.* Your router bit may not be centered within the base, so measure to the point on the base that will ride against the straightedge in the coming steps. Mark this point on the top side of the base with a small piece of masking tape.



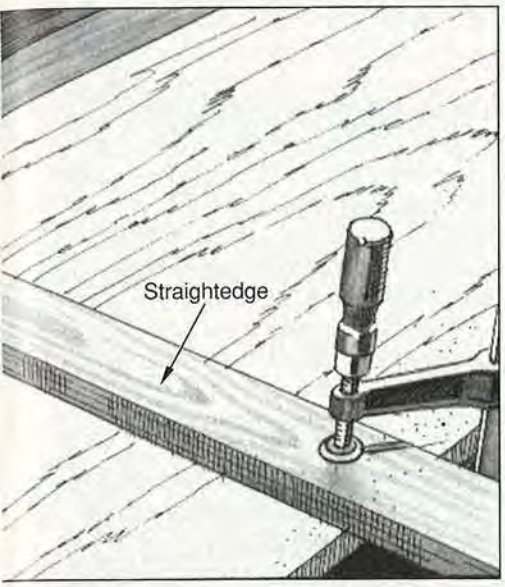
4 Clamp your story pole along the marked edge of the panel as shown *above right*. Using the bit-to-edge-of-router base measurement you made in Step 3, position the straightedge this distance from the layout line closest to the panel bottom. Measure the distance between the straightedge and the bottom end of the panel along both sides of the panel to make sure the straightedge is parallel with the panel's bottom edge. Clamp one end of the straightedge securely to the panel, and the other end to the story pole.

5 Make the cut by moving the router from left to right as you stand at the bottom of the panel and face the straightedge. Moving the router in this direction helps keep it against the straightedge. The router will tend to wander from the straightedge if you move it from right to left.

Also, remember to keep the marked spot of your router's base against the straightedge. You might get inconsistent results if you don't follow this rule.

SPACED DADOES

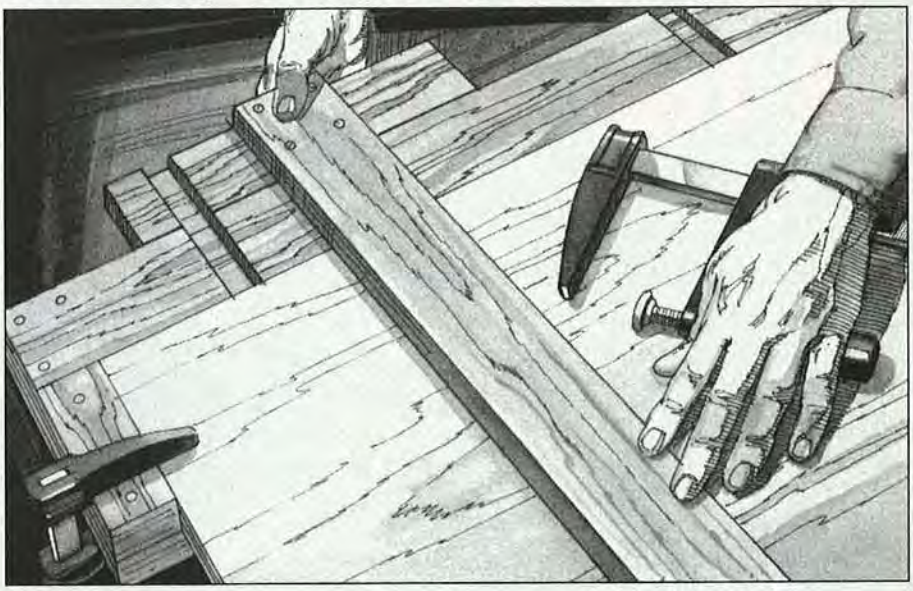
furniture and cabinets

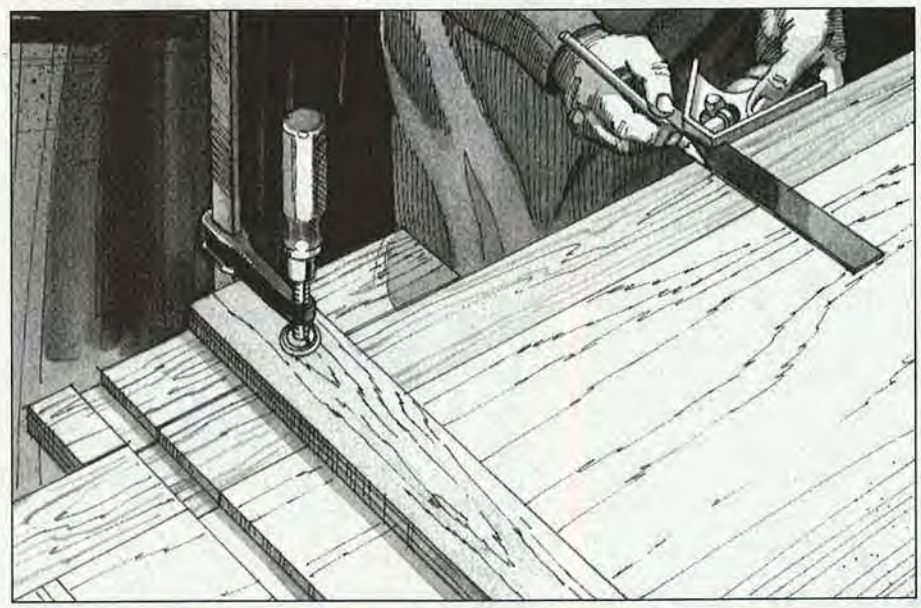


6 For subsequent cuts on this panel, extend your layout lines onto the story pole with a square as shown *below*. Now, to position the straightedge you need only align the cut in the head of the straightedge with the extended marks on the story pole. Before making the cut, remember to adjust the straightedge parallel with the bottom end of the panel.

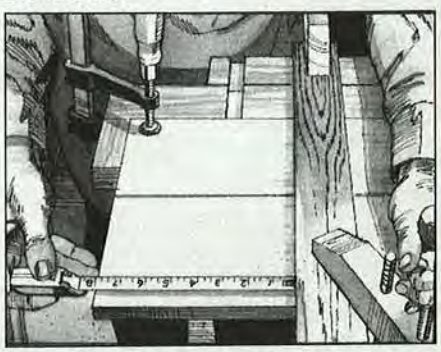
7 After completing your first panel, the story pole provides a cutting guide for all matching panels. You simply clamp the story pole to the left edge of the panel and align the cut in the straightedge head with the story pole cut as shown *below*. Adjust the straightedge parallel with the panel bottom as described in Step 4 and clamp it.

When cutting dadoes in the middle of wide panels you may find that you cannot reach all the way across the panel. At these times, turn the router off about halfway through the cut, holding it firmly against the straightedge as you allow it to come to a stop. Walk around to the opposite side of the panel, back the router up, turn it on again, and complete the cut.





8 When cutting narrow panels or boards, you can save yourself some time and effort by clamping them edge to edge as shown *below*. Before cutting them, make sure their ends are flush.

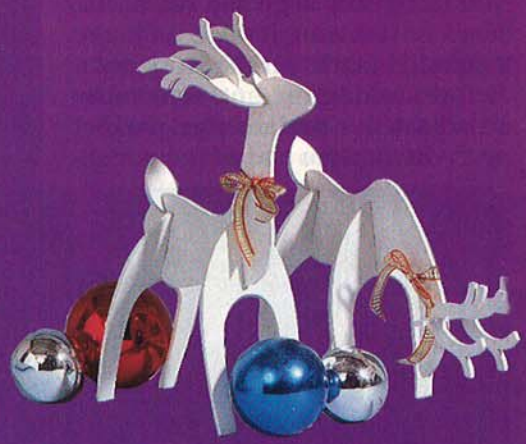


Written by Bill Krier with Jim Boelling
Illustrations: Jim Stevenson

Handcrafted CREATIONS FOR THE HOLIDAYS

Looking to please a loved one or dear friend this Christmas with the perfect handcrafted gift? If so, you'll enjoy making one or more of the following eight woodworking projects. Over the next 24 pages you'll see toys for the little elves in the family, holiday decorations, a novel way to make greeting cards, a sled for wintertime fun, a perfume decanter, and a splendid oak corner cabinet.

Where needed, we've included full-sized patterns for project parts. These you'll find either with the project write-up, or with our all-new *WOOD PATTERNS*™ insert at the center of the magazine. So, who says you can't play Santa Claus (and have a great time doing it)?



A classic turn-of-the-century

SNOW STROLLER

Your little one(s) will love it!

Explore winter's wonderland with your favorite snow angel using this smooth-riding white-oak sled. To push it like a stroller, just flip the handle up and lock it in place. Or, fold the handle down and pull the rope like you do with any other sled, and be on your merry way.

Continued

Print this article

Why we used white oak for this project

Chances are good that this great-looking sled will get lots of use, both now and in the future. To make sure that it will be able to withstand the elements as well as the inevitable wear and tear, we selected white oak. Native to the eastern United States and Canada, white oak rates as one of the strongest, heaviest, and hardest of all the oaks. The pores of this species contain tyloses—bubblelike structures in the vessels of certain hardwoods that help to prevent liquids from penetrating. This attribute makes white oak a perfect material for liquid containers and barrels, and an excellent candidate for outdoor projects such as our sled.

Although you shouldn't have any trouble locating white oak for the parts, we found white oak dowel stock nearly impossible to find. For this reason, we used round-over bits to machine our own dowel stock as described in the story.

Marlen Kemmet
Senior Editor/How To

Let's start with the runners

1 From ¾"-thick white oak, cut the runners (A) to the size listed in the Bill of Materials.

2 Using double-faced tape, stick the two runner blanks together face-to-face with edges and ends flush. The taped-together surfaces will be the *inside* surfaces of the finished sled. For reference, mark the *outside* surfaces with an X.

3 Transfer the full-sized runner end patterns from the *WOOD PATERNS*™ insert in the center of the magazine (we used photocopies and spray adhesive) to the runner blank. Bandsaw along the marked lines to cut the runners to shape. Sand the cut edges to remove the saw marks.

4 Bore a ½" rope hole through the front end of the taped-together runners where marked.

5 Mark the centerpoints for the five 5/32" holes on one runner where shown on the Runner portion of the Parts View drawing. Drill 5/32" holes through both runners at each centerpoint. (Because a twist-drill bit tends to wander with the grain in white oak, we used brad-point bits to eliminate bit wander.) Countersink the 5/32" holes on the *outside surfaces*; those marked with an X. Mark the centerpoint for the 3/16" hole, and drill it where marked.

6 With the runners still taped together, mark the four centerpoints for the ½" dowel holes centered along the *top edge* of each runner where shown on the Parts View drawing. Drill ½" holes ½" deep where marked.

7 Use a wood wedge to pry the runners apart. Remove the carpet tape and any sticky residue with lacquer thinner. Countersink the rope holes slightly to keep the pull rope from fraying later.

8 To form the counterbores for the front ¾"-diameter dowel (D), chuck a ¾" Forstner bit into your drill press, and bore ¼"-deep holes on the *interior side* (those not marked with an X), centered over the previously drilled 5/32" holes (one per runner). Set the runners (A) aside for now.

Machine the seat and backrest pieces next

1 Cut the armrests (B) to size. Lay out the dowel and wood screw centerpoints where shown on the Parts View drawing. Remember when marking that you're creating a matching pair. Drill the holes to size.

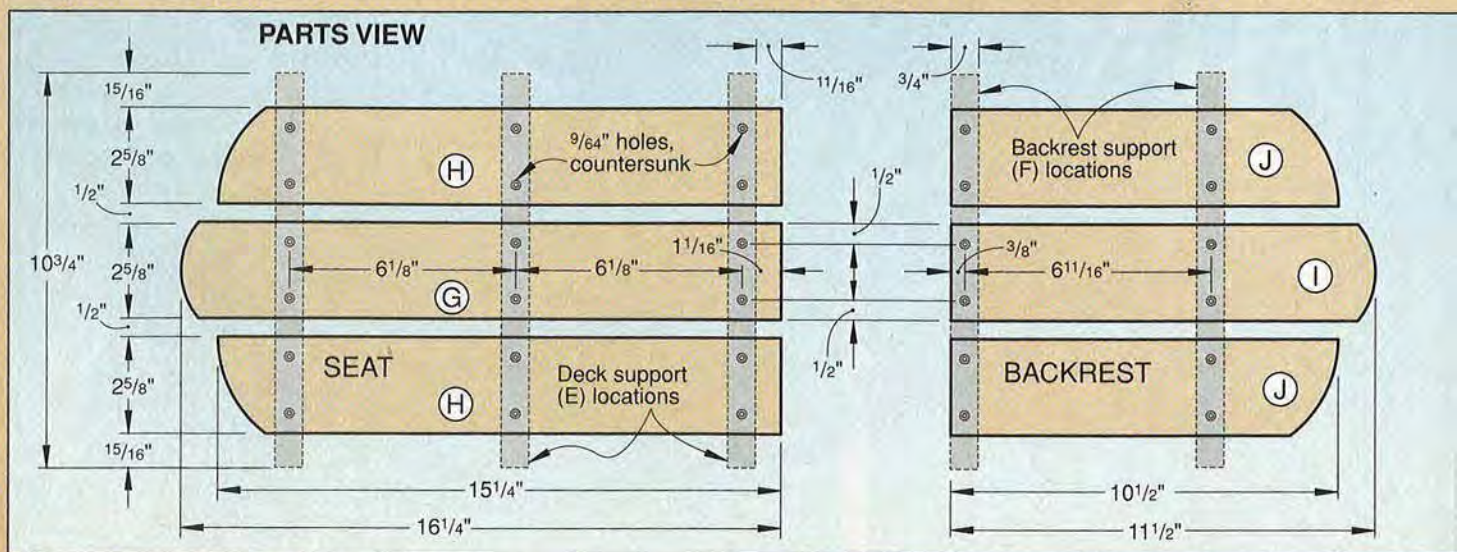
2 Rout ¼" round-overs along the top edges and ends of both armrests. Do not rout the bottom edges. See the Sled Assembly drawing *at right* for reference.

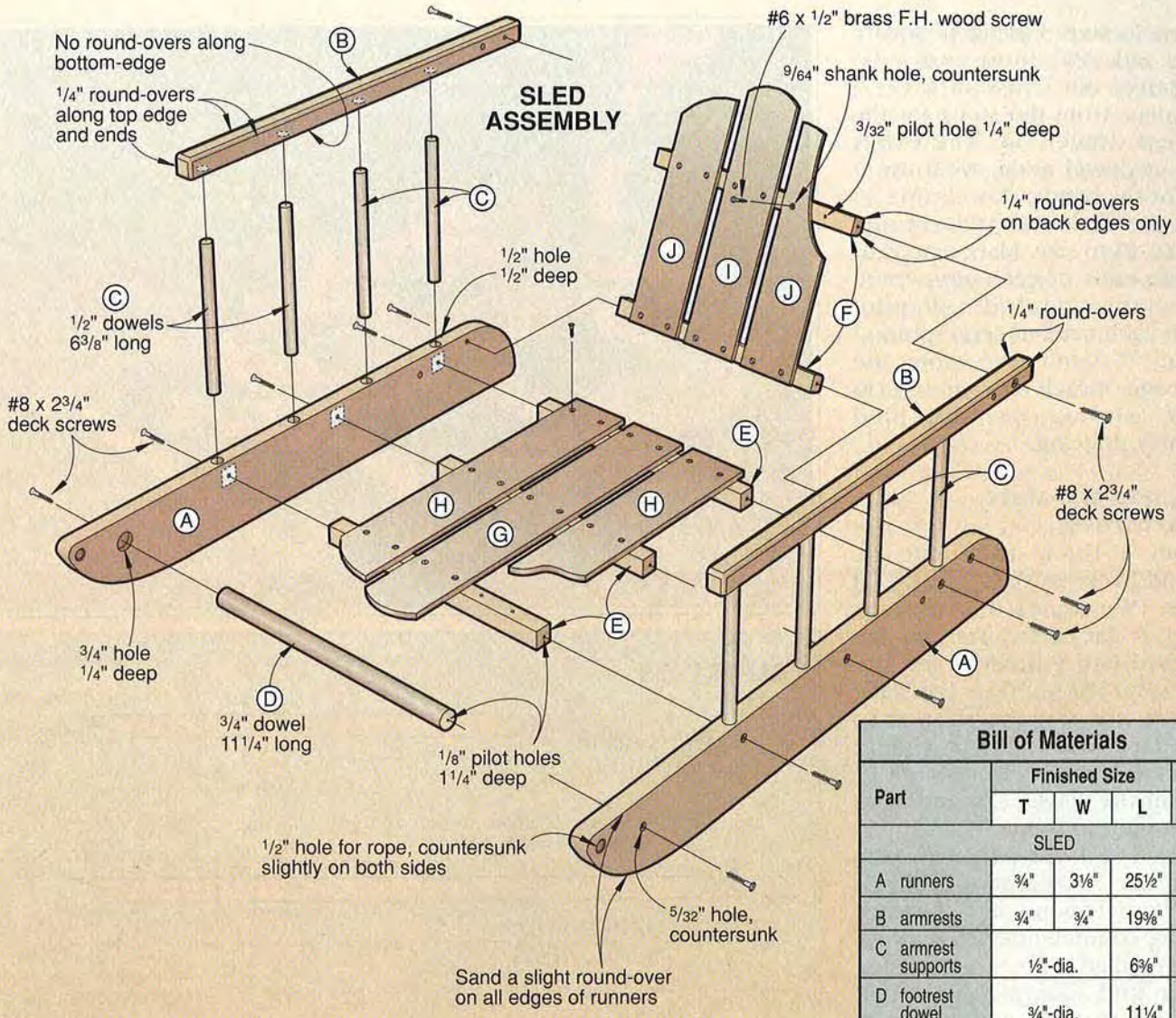
3 To make the ½" armrest-support dowels (C), cut a piece of white oak to exactly ½×½×56". Fit your table-mounted router with a ¼" round-over bit and fence, and rout a ¼" round-over along all four edges of the 56"-long piece. Sand the dowel smooth.

4 Crosscut eight pieces of 6⅜"-long dowel stock from the 56"-long piece.

5 To create the ¾"-diameter footrest dowel (D), repeat the

Continued



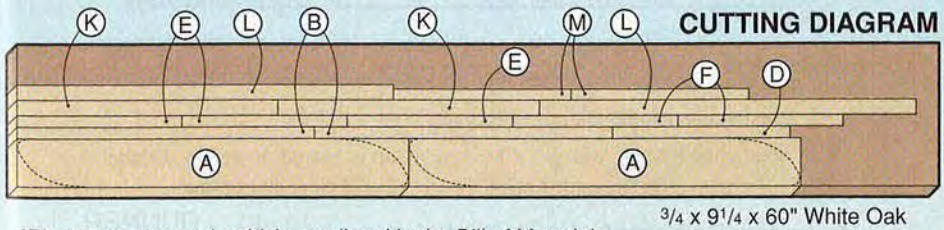

SLED ASSEMBLY
No round-overs along bottom-edge
1/4" round-overs along top edge and ends
#6 x 1/2" brass F.H. wood screw
9/64" shank hole, countersunk
3/32" pilot hole 1/4" deep
1/4" round-overs on back edges only
1/4" round-overs
1/2" hole 1/2" deep
1/2" dowels 6 3/8" long
#8 x 2 3/4" deck screws
#8 x 2 3/4" deck screws
3/4" hole 1/4" deep
3/4" dowel 11 1/4" long
1/8" pilot holes 1 1/4" deep
1/2" hole for rope, countersunk slightly on both sides
5/32" hole, countersunk
Sand a slight round-over on all edges of runners

Bill of Materials

Part	Finished Size T	W	L	Matl.	Qty.
SLED					
A runners	3/4"	3 1/8"	25 1/2"	WO	2
B armrests	3/4"	3/4"	19 3/8"	WO	2
C armrest supports	1/2"-dia.		6 3/8"	WO	8
D footrest dowel	3/4"-dia.		11 1/4"	WO	1
E deck supports	3/4"	3/4"	10 3/4"	WO	3
F backrest supports	3/4"	3/4"	10 3/4"	WO	2
G seat slat	1/4"	2 5/8"	16 1/4"	WO	1
H seat slats	1/4"	2 5/8"	15 1/4"	WO	2
I backrest slat	1/4"	2 5/8"	11 1/2"	WO	1
J backrest slats	1/4"	2 5/8"	10 1/2"	WO	2
HANDLE ASSEMBLY					
K lower arms	3/4"	1"	17"	WO	2
L upper arms	3/4"	1"	24 1/2"	WO	2
M cross dowels	3/4"-dia.		11 1/4"	WO	2

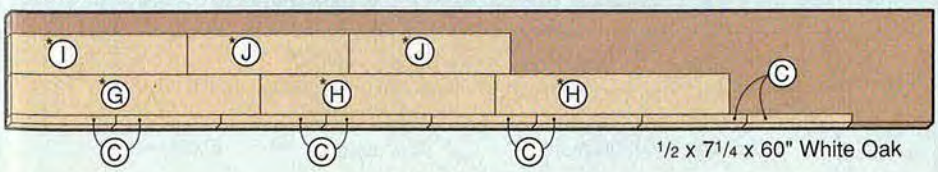
Material Key: WO–white oak
Supplies: #6×1/2" flathead brass wood screws; 8–#10×2" brass roundhead machine screws (trimmed to length) with 8 brass flat washers, 2–#10 brass wing nuts, 2 brass hexhead nuts, 4-#10 brass acorn nuts; #8×2 and #8×2 3/4" deck screws; 3/8" braided nylon rope 8' long; clear exterior finish.

CUTTING DIAGRAM



3/4 x 9 1/4 x 60" White Oak

*Plane or resaw to the thickness listed in the Bill of Materials



1/2 x 7 1/4 x 60" White Oak

process in Step 3 using ¾"-square white oak 40" long and a ⅜" round-over bit. Crosscut a 11¼"-long piece from the stock for the footrest dowel. Set the other piece of dowel aside; we'll use it later for the handle dowels (M).

6 Cut the deck and backrest supports (E, F) to size. Mark diagonals on both ends of each support to find center, and drill a ⅛" pilot hole at each marked centerpoint.

7 Rout ¼" round-overs along the back edge of each rear support (F) where shown on the Sled Assembly drawing.

Now, add the slats and armrests

1 From ¼"-thick stock, cut the seat and backrest slats (G, H, I, J) to size. (We planed thicker stock to the ¼" thickness.) Transfer the full-sized end patterns (see the *WOOD PATTERNS*™) to the slats. (We transferred the shapes to hardboard, cut these to shape, and used them as templates to mark all the slats.) Cut and sand the slat ends to shape.

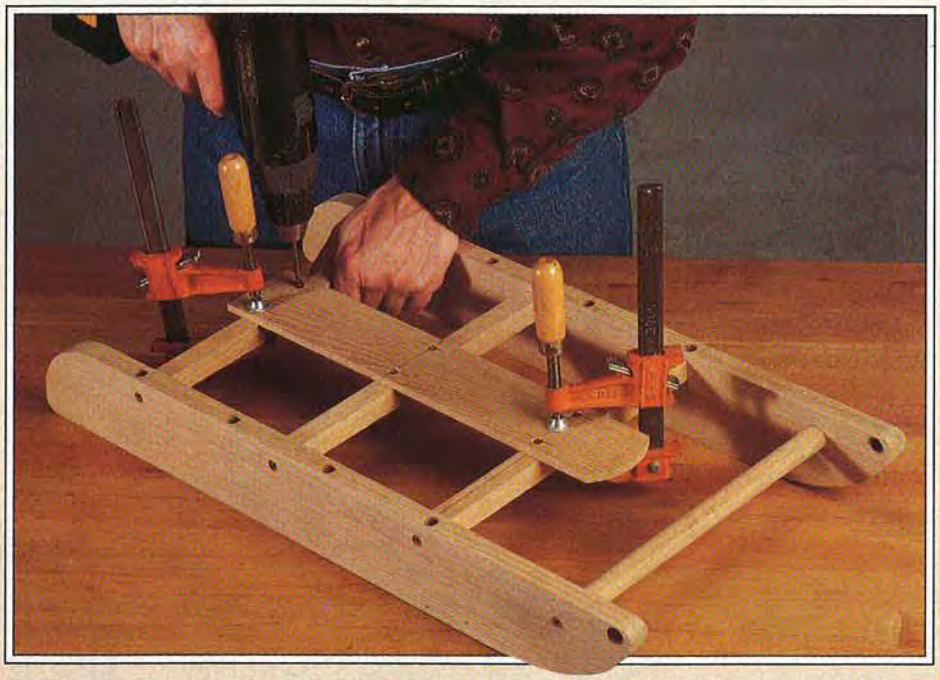
2 Mark the hole centerpoints shown on the Seat and Backrest Parts View drawing onto the slats. Drill the countersunk screw holes where marked.

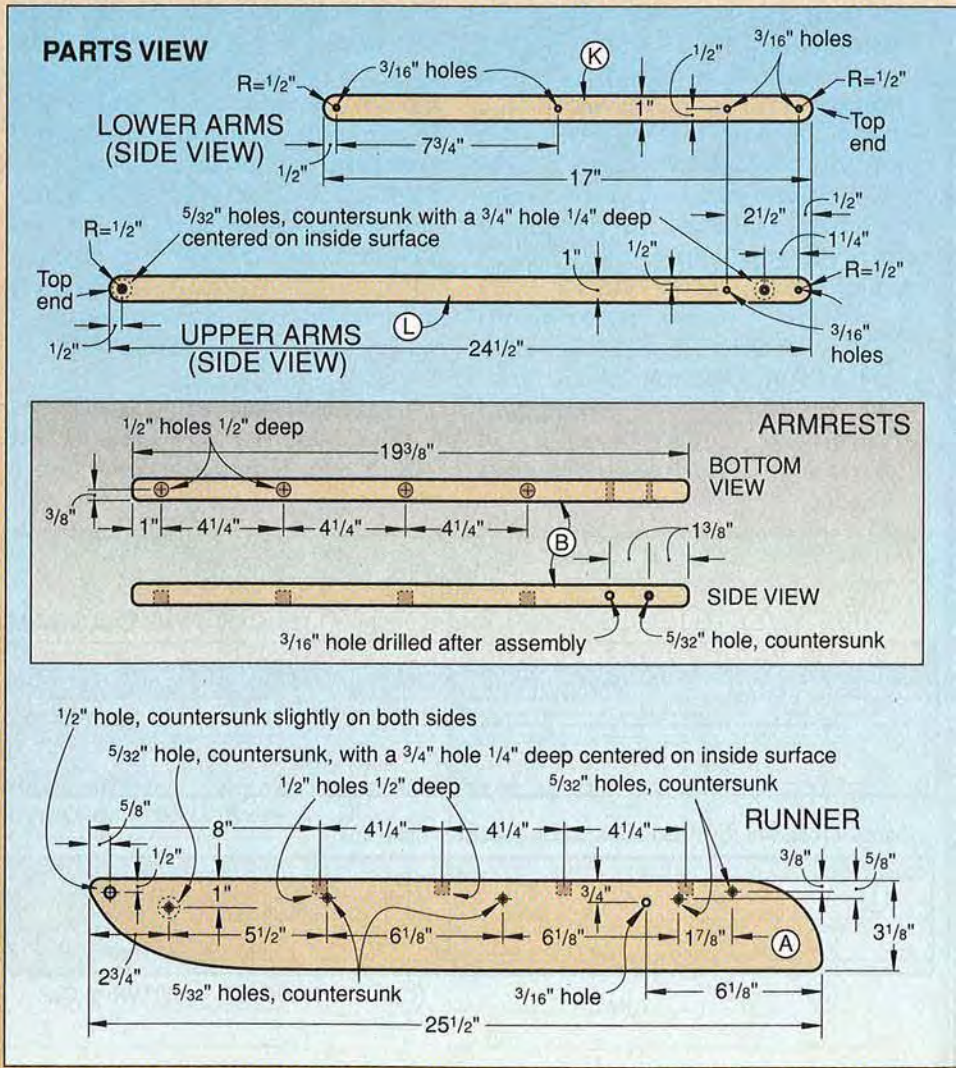
3 Glue and clamp the ¾" oak footrest dowel (D), and deck supports (E) between the runners (A). Drive the screws through the previously drilled shank and pilot holes. (To avoid twisting off the screw, we rubbed the threaded end against a bar of paraffin before driving the screws.)

4 As shown in the photo *above right*, clamp and screw the seat center slat (G) in place. Then, add the side slats (H).

5 Using Titebond II or Weather-Tite water-resistant glue or slow-set epoxy, glue the ½" white oak dowels (C) between the armrests (B) and runners (A).

6 Screw (don't glue) the backrest supports (F) between the armrests and runners. Angle the backrest supports so the front edges are





parallel. Then, using the same procedure as used in Step 4 on the *previous page* and the Backrest drawing for dimensions, screw the backrest slats (I, J) to the backrest supports (F).

The handle assembly comes next

1 From ¾" white oak, cut the lower arm pieces (K) and upper arm pieces (L) to size.

2 Clamp the lower-arm pieces parts edge-to-edge. Do the same for the upper-arm pieces. Next, mark the hole centerpoints on each of the two pairs where shown on the Parts View drawing.

3 Use a compass to mark a ½" radius on each end of each handle arm. Separate the pieces, and cut the arm ends to shape.

4 With a 3/16" brad-point bit, drill the machine screw holes through all four handle pieces where marked. Switch to a 5/32" bit, and drill the remaining two holes in the upper arms where marked.

5 Bore a pair of ¾" holes ¼" deep centered over the 5/32" holes on the *inside face* of the upper arms (L). Crosscut the upper arm dowels (M) from the ¾"-diameter dowel stock formed earlier.

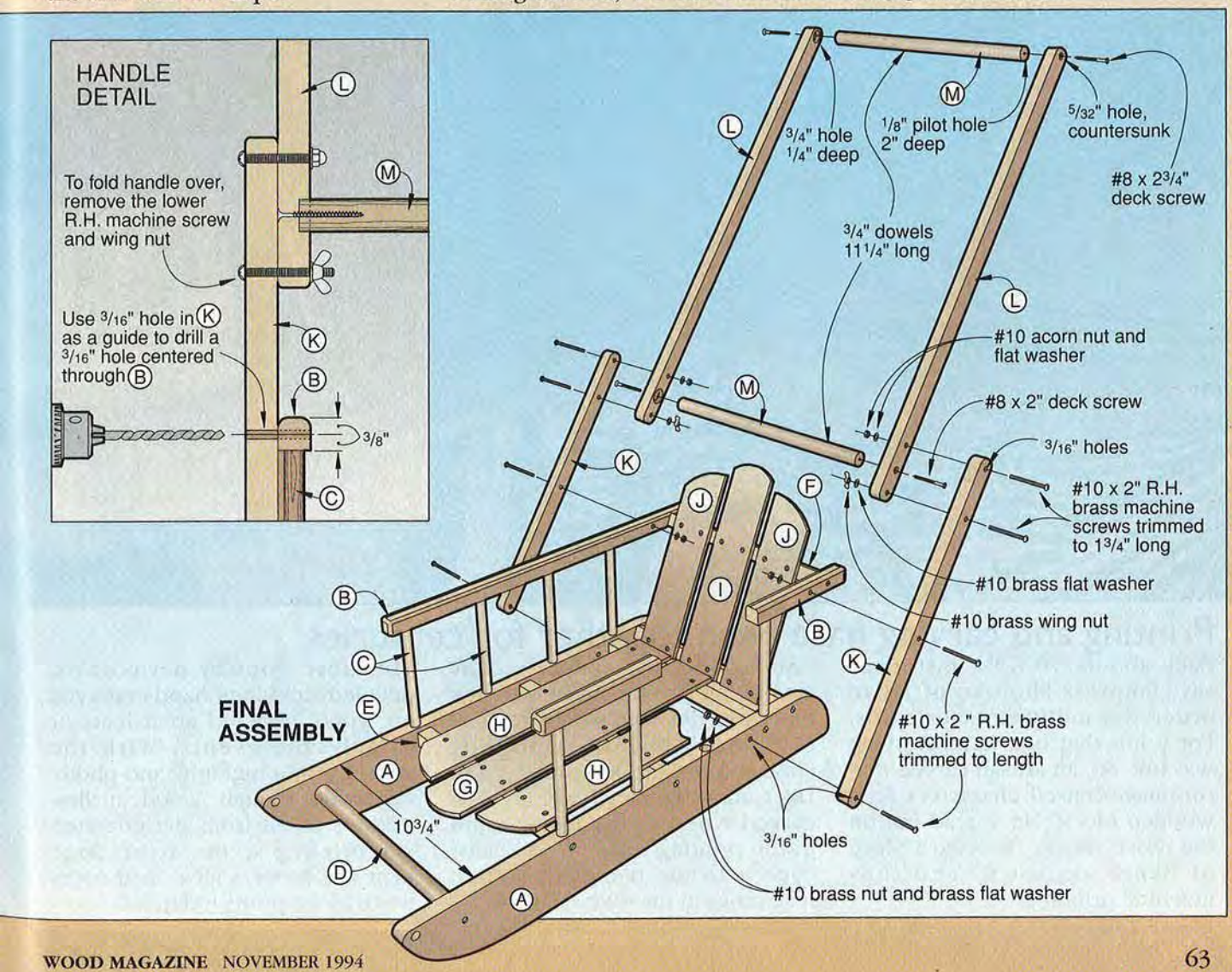
6 Glue and screw the upper arm assembly (L, M) together, checking for square.

7 Use machine screws to secure the *bottom end* of the lower arms to the runners (parts K to A). Next, use machine screws to connect the upper-arm assembly to the lower arms. (To eliminate protruding screws, we started with 2"-long machine screws and used a hacksaw to trim the ends of the screws flush with the outside surface of the nuts.)

8 Position the handle assembly until the holes in the lower arms (K) align with the *center* of the armrests (B). Now, use the previously drilled 3/16" holes in the lower arms as guides to drill mating holes through the armrests. See the Handle detail *below left* for reference.

9 Separate the pieces, and finish-sand the sled, upper-arm assembly, and lower arms. Apply at least two coats of spar varnish. Add a rope. Reassemble the parts, and head for the snow.

Written by Marlen Kemmet
Illustrations: Kim Downing
Photographs: John Hetherington


HANDLE DETAIL
To fold handle over, remove the lower R.H. machine screw and wing nut
Use 3/16" hole in (K) as a guide to drill a 3/16" hole centered through (B)
3/8"
FINAL ASSEMBLY
3/4" hole 1/4" deep
1/8" pilot hole 2" deep
5/32" hole, countersunk
#8 x 2 3/4" deck screw
3/4" dowels 11 1/4" long
#10 acorn nut and flat washer
#8 x 2" deck screw
3/16" holes
#10 x 2" R.H. brass machine screws trimmed to 1 3/4" long
#10 brass flat washer
#10 brass wing nut
#10 x 2 " R.H. brass machine screws trimmed to length
10 3/4"
3/16" holes
#10 brass nut and brass flat washer

Carving you can share with your friends

BLOCK PRINTS

Printing and carving have been together for centuries

Back about 770 A.D., historians say, Empress Shotoku of Japan ordered a million prayer cards. For a job that big, hand-copying was out. So, an artisan carved mirror-image, raised characters on a wooden block. He spread ink on the raised surface, pressed a piece of paper against it, and thus invented printing.

About 950 A.D., paper money was being printed from wooden blocks in the Szechwan province of China. Wood-block printing appeared in Europe around 1300. Later, movable metal type pushed carved wood to the background in the printing trade. Wood came back with the rise of illustrated magazines in the 19th century.

In those popular periodicals, detailed drawings hand-engraved on wood depicted great feats or cataclysmic events. With the advent of photography and photo-engraving, though, woodcut illustrations faded from the commercial printing scene. Artists have kept the process alive, and many make block prints today.

Print this article

As much as you'd like to, you can't send a carving to everyone on your Christmas list. So, here's the next best thing: Relief-carve a seasonal design and print your own cards from it. You don't have to be an expert carver—or printer—to achieve great results with this old printmaking technique.

For fine-arts printmakers, wood has long been a favorite medium. Most artists working in wood-block printing make *woodcuts*, designs carved on the face of a piece of wood with knives and gouges or power-carving equipment. *Wood engraving*, another style, involves incising the image into the end grain of a block with engraver's tools.

Woodcuts generally feature bold areas with few fine lines. Wood engravings are more detailed, often looking like shaded Victorian magazine illustrations. For our Christmas cards, we chose the woodcut style.

Print with plywood

The process starts with a printing block, which is nothing more than a relief carving. And, it can be a shallow relief at that. For the cards shown, we carved less than 1/16" deep on 1/4"-thick plywood.

The thickness of the block isn't critical, but it does need to be flat and have one smooth face without splits or knots. With judicious cutting, scraps of ordinary A-B or A-C plywood will work fine. You could use solid stock, too.

Cut your blank to 3 1/4×6 1/4". Saw it slightly oversize, then sand to finished size. This way you'll avoid splintered edges or ends, which could mar your prints. Sand the good face smooth. This will be your printing surface, so you don't want any dings or dents to spoil your prints.

Give that pattern a flip

Whatever you carve into the block will come out printed *backwards* on your paper. So, you must reverse the pattern as you transfer it to the wood. (Direction doesn't matter much with the patterns we show, but it could on others.) Here's how.

Photocopy one of the three patterns *below and next pages*, with the machine set for a dark copy. Lay the copy facedown on your

Continued

We used these tools and supplies

Stock

1/4×3 1/4×6 1/4" plywood, one smooth face

Carving tools

V-tool

1/16", 1/8" no. 12

Gouges

No. 11 U-veiner, 1/8"

No. 9, 1/4"

No. 5, 1/8", 1/4"

Knife

Bench knife or X-Acto knife

Printing supplies

Block-printing ink, water-soluble, your choice of color

Brayer

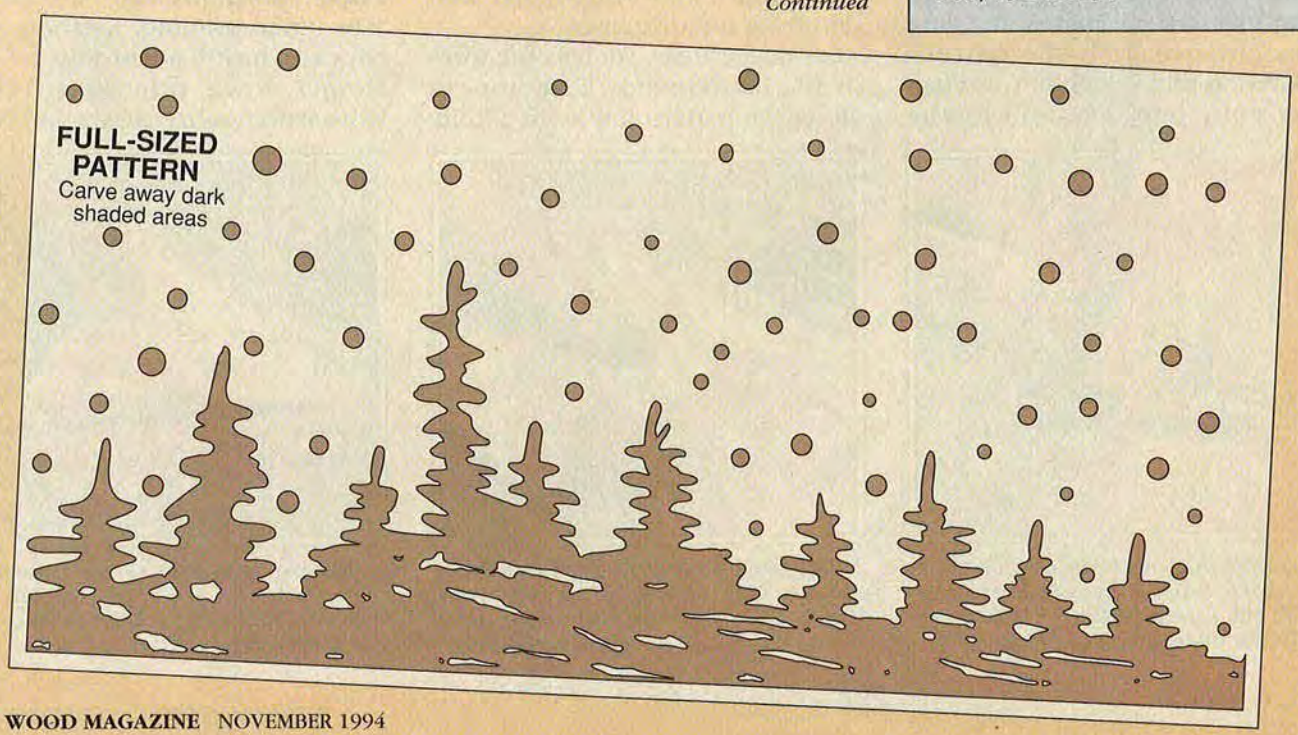
Baren or tablespoon

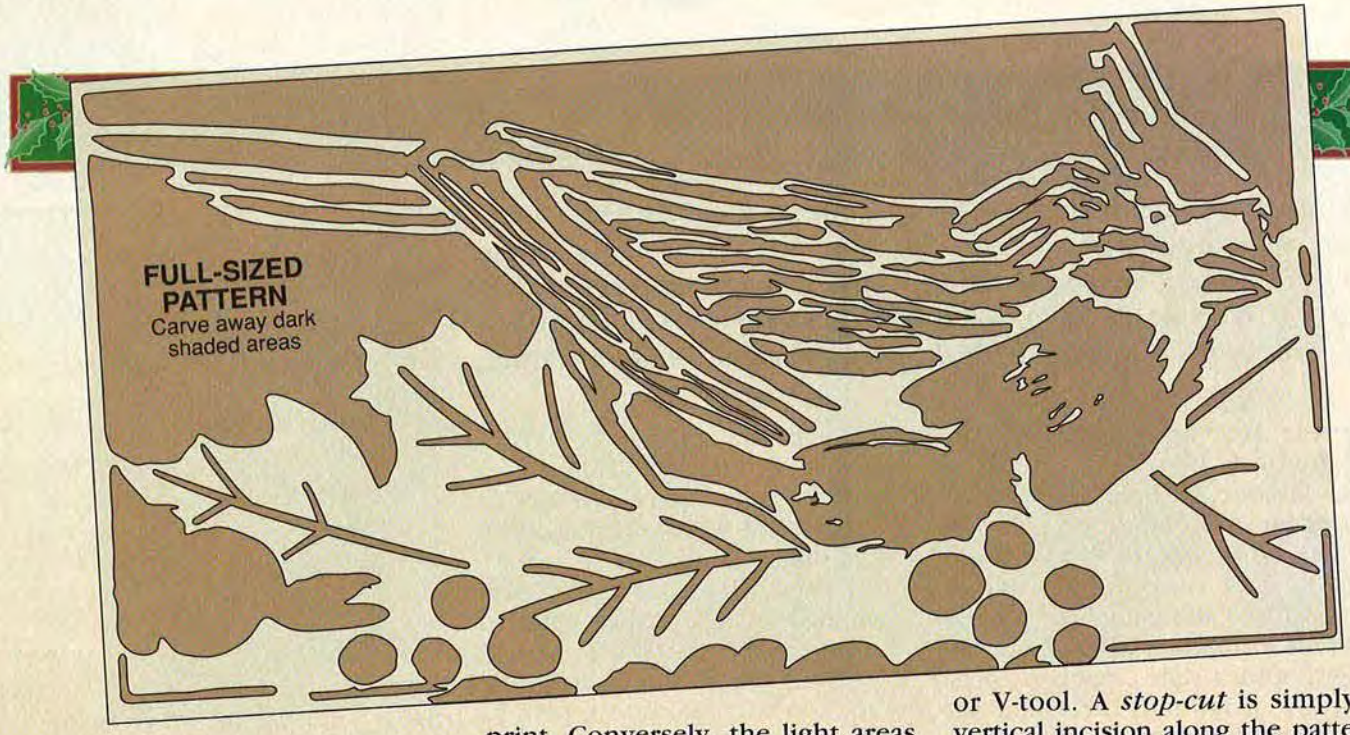
Glass or acrylic, about 12×12"

Paper (see text)

Buying guide

Printing supplies and paper. For ink, brayer, baren, rice paper, and drawing paper, see your local art-supply dealer, or order from The Art Store, 600 Martin Luther King Blvd., Des Moines, Iowa 50312, 800/652-2225.





printing block, and run a hot clothes iron (the wool setting works fine) over the back to transfer the image to the wood.

Or, lay onionskin (tracing paper) over the original pattern. Trace the pattern lines, using a fine-point marker. Now, flip the tracing over, placing the side you drew on against the block. Fasten it with tabs of masking tape at the top. Then, slip a piece of transfer paper or carbon paper between the wood and the tracing, and trace the lines onto the wood through the thin paper.

The pattern you carve not only will print reversed, it will print as a *negative* image. That is, the dark lines and areas on the pattern illustration will be white (or whatever your paper color) in the print. Conversely, the light areas on the drawing will print in your ink color.

Carve your Christmas card

Cut away the lines and dark areas in the pattern. We carved our blocks with palm-handled tools and a bench knife. Use whatever tools you prefer, but be sure they're sharp. Ragged cuts in the carving translate to fuzzy lines in the finished print. Hold the block with a bench hook or nonskid mat as you carve.

Begin with the inside detail lines, such as the angel's face. Cut the narrow lines with a V-tool. Maintain constant width and depth for uniform lines.

For larger areas, such as the trees or the backgrounds, first stop-cut along the pattern line with a knife or V-tool. A *stop-cut* is simply a vertical incision along the pattern line. It breaks the chip as you cut toward the line.

After making your stop cut, start in the dark area and work toward the pattern line with a shallow gouge, such as a no. 5. Clear out all waste in the area, working from the center out to all edges. Cut only as deep as your stop-cut; otherwise, you'll probably chip out the edge of the carving area. Where gouges won't work, use the tip of your knife. Remember, the relief doesn't need to be deep, and the background doesn't need to be smooth.

Paper to print on

"For block printing, Japanese rice paper is best," according to Des Moines, Iowa, print artist Peggy Johnston, who designed our

1. Apply a thin, uniform coat of ink to the block with a brayer. Spread it across the raised surface, but don't get ink in the lines or carved areas.

2. Rub the back of the print evenly for the best impression. A bamboo baren, *left* in photo, produces the best print, but a spoon bowl does a passable job.

3. Peel the print back slowly from a corner to remove it from the block. Inspect it as you go. Be careful not to smear the ink at this stage.

woodcuts. "It isn't stiff enough to fold into a card, though," she hastily adds. "A lot of artists print on a piece of rice paper, then mount it on a stiffer piece."

Peggy printed on 3¼×6¼" pieces cut from a 19×24" sheet of white rice paper (three across, seven vertically). Then, with spray adhesive, she mounted each print on the front flap of a 6½×7" piece of drawing paper folded in half the long way. The finished cards fit regular 3⅝×6½" envelopes sold by drugstores and stationers.

You also can print directly onto the heavier folded paper, as shown in the photographs. (For two-color cards, print onto colored stock.) If you print right onto the folded card, open it up before you print so you're working with only one thickness.

Now, it's time for a proof

With the block carved and a supply of paper on hand, you're ready to print. Start with a *proof*, which is just another name for a test print. You'll check the proofs for any needed corrections.

First, squeeze out a bead of block-printing ink (1" or so) onto the center of a piece of glass or acrylic sheet. We used water-soluble ink for easier clean-up. Then with a *brayer*, a rubber roller with a short handle, roll out the ink into a thin film.

Now, ink the printing block with the brayer. Roll it across the spread-out ink to pick some up, then over the carved surface of the printing block to deposit some, as shown *opposite page, Photo 1*. Roll from several directions, covering the raised area completely. Don't get ink in the lines or background.

Align an edge of the paper along one edge of the block without letting it touch the inked surface. Then, lay the paper facedown across the block. Don't try to move it after you've laid it down. Rub the back with a bamboo *baren* (a printmaker's rubbing pad) or the back of a spoon, as shown in *Photo 2*. Hold the paper to prevent it from shifting as you rub firmly, covering the entire image area.

Lift one corner, as shown in *Photo 3*. Peel the print back slowly to make sure you've printed the entire design. After you've removed the print, check it closely. If you need to touch up the carving anywhere, wipe the ink off the block first. Print another proof after making any changes. Continue proofing and correcting until you're satisfied, then print the cards.

String a clothesline to hang up the completed prints to dry. Ink the block, and produce your first print. Hang it up to dry (we used regular clothespins, hanging two prints back-to-back with each one). Then, re-ink the block and print another card.

For a numbered edition, keep the prints in order as you lift them off. After the ink dries, count how many you've made—say 42. Number the first one 1/42, the second 2/42, and so on. Pencil the number in the margin, along with your signature and the date.

Project Design: Peggy Johnston
Photographs: John Hetherington
Illustrations: Kim Downing

A Delectable Holiday Dish

SCROLLSAWN PLATE

Print this article

Collecting and displaying decorative plates has long been a popular pastime. Now, thanks to artist and designer Judy Gale Roberts of Lufkin, Texas, scrollsawyers can join in the fun. Her technique lets anyone with a scrollsaw create a lovely commemorative plate.

***Note:** The pattern fits a 12"-diameter plate with a 2"-wide rim, available through our Buying Guide source. Or, you may turn your own plate, utilizing the template shown* at the bottom of the page. *You could modify the pattern to fit other plates with different dimensions.*

Photocopy the full-sized pattern from the WOOD PATTERNS™. (On letter-size paper, you'll need to copy the 12"-diameter pattern in four parts. So for best results, use a copier that makes 8½×14" or 11×17" prints, then two copies will do the trick.) Copy the bottom part of the pattern on one sheet and the top part on another. Then, trim the copies for a slight overlap, align the two parts, and tape them together into a single sheet. Cut the separate patterns for the plate's well and rim from the sheet.

Center the plate-well pattern on the plate. Align either the vertical or horizontal centerline along the grain—whichever you prefer. (For the plate shown, we aligned the horizontal line with the grain.) Draw small alignment marks on the plate with a pencil.

Spray the back of the plate-well pattern with aerosol mounting adhesive. Carefully align the marks you made, then adhere the pattern to the plate. Apply adhesive to the back of the rim pattern, and stick it to the plate, lining up its vertical and horizontal centerlines with those on the plate-well pattern.

Drill the 1/16" blade-start holes and the ⅛" holes that represent holly berries where shown. Then, cut out the plate-well design. Thread a narrow blade through the blade start hole in the double candle halo to begin. (We used a #4 blade, .035×.015" with 18 teeth per inch.)

When you cut the design into the plate rim, the saw table will not contact the rim.

Put your fingers under the outer edge of the plate to prevent tipping it down as you saw. Hold the plate where you won't run your fingers into the blade. We didn't have any tear-out on the back of the rim despite the unsupported sawing.

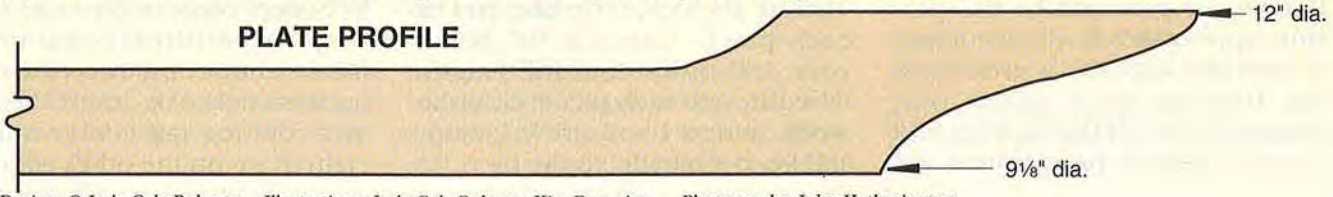
Finish the plate as you wish. A spray-on clear finish will protect it from fingerprints and stains. Or, go wild with painting, staining, or carving to create an eye-catching holiday decoration.

Dress up your plate quickly and easily with colorful gift wrapping and ribbon, as shown *below*. Cut pieces to fit behind the cut-out candles, bow, and holly leaves in the plate well. Tape the wrapping and ribbons to the back of the plate. Then cover the back with a circle of cardboard or felt. Brighten the holly berries by pressing a fuzzy, red pom-pom (available from craft-supply stores) into each hole. Let the pom-pom puff out from the hole slightly.

Buying Guide

Plate and pattern. Turned 12" plate packaged with a precut, full-sized pattern and a list of 10 other available pattern designs, $14.95 ppd. in U.S. Order kit no. WD11. Send to Collector Plates, P.O. Box 1925, Lufkin, TX 75902. For credit card orders only, call 800/316-9010.

PLATE PROFILE



Project Design: © Judy Gale Roberts Illustrations: Judy Gale Roberts; Kim Downing Photographs: John Hetherington

PERFUME APPLICATOR

An easy-to-make gift that looks, feels, and smells great

Maybe you got away with giving a steam iron last year, but don't push your luck this time. Instead, show your sensitive side with this purse-sized perfume applicator. And, because you can turn it yourself, it's a gift with extra meaning.

We used these tools and supplies

Stock: Miscellaneous hardwoods, ¾×¾×2 15/16" and ¾×¾×1". (Maple and purpleheart shown in photo.)

Lathe equipment: Three-jaw or Jacobs-type chuck for headstock, rotating cone center for tailstock, turning mandrel (see the Buying Guide, *opposite page*).

Turning tools: Spindle gouges, ¼", ½", and ¾". Skew, ½".

Lathe speeds: Roughing, turning: 1000–1500 rpm.

Start with two pieces of ¾"-square turning stock, one 2 15/16" long and the other 1". The longer part will be the perfume applicator's body; the shorter one, the cap. For a great-looking turning with grain that appears to be continous from end to end, cut both parts from a single piece of stock. Then, mark the mating ends and keep the pieces in order for the next steps.

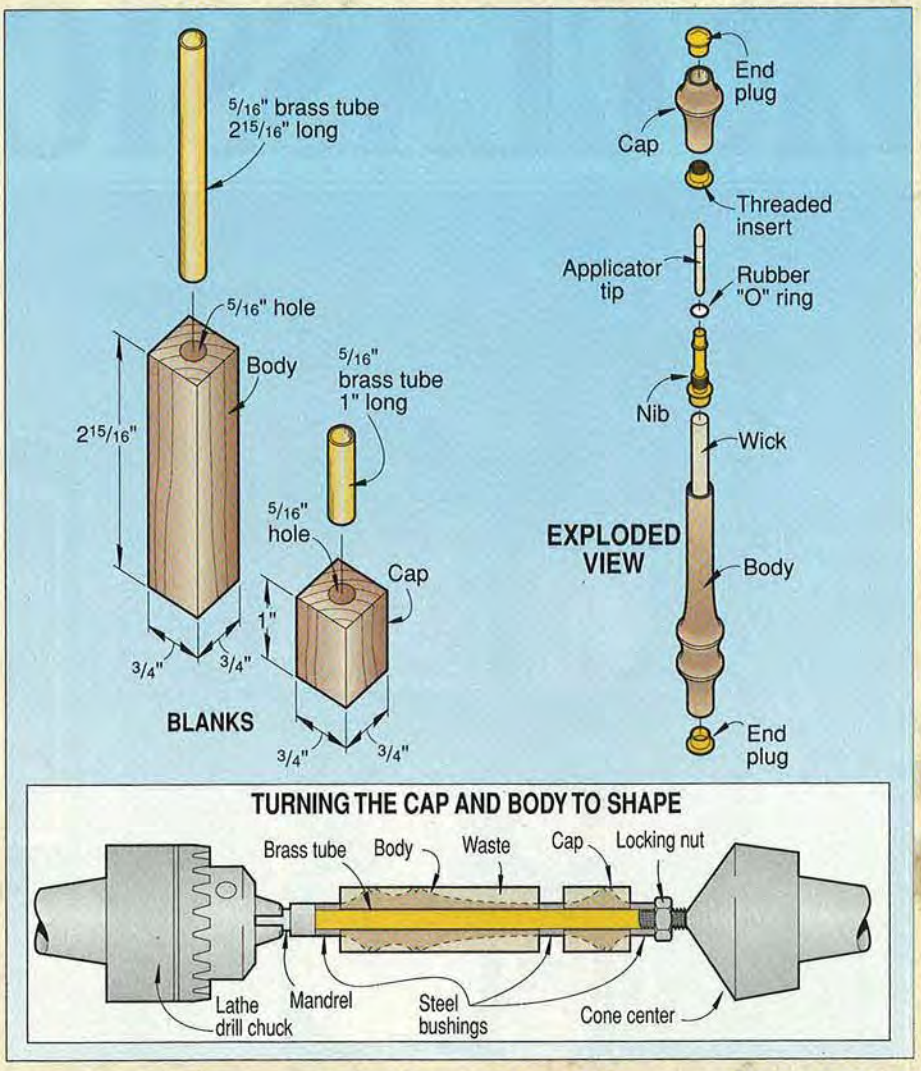
Locate the center on one end of each piece. Chuck a 5/16" bit in your drill press, and drill lengthwise through each piece. Grip the stock with a handscrew clamp, and keep it parallel to the bit.

Glue a brass tube (supplied in the kit) into each drilled blank, using either epoxy or cyanoacrylate (instant) adhesive. Don't starve the ends of the tube for glue—the brass and wood must be bonded firmly at the ends. Sand the wood flush with the brass on the ends, keeping the ends square.

Turn the cap and body

Slide the blanks onto the mandrel, separating them with the steel bushings where shown in the Turning the Cap and Body to Shape drawing, *opposite page*. Thread on the nut, and tighten it sufficiently to keep the wood from turning on the shaft.

Now, mount the mandrel between centers on your lathe. Grip the unthreaded end in a Jacobs chuck or a three-jaw chuck on the headstock. Insert the point of a rotating tail center into the centerbore on the other end.



Press fittings into tubes with a vise. Wood block shown here prevents damage to applicator nib.

Round down the blanks to 5/8" diameter with a 3/4" or 1/2" gouge. Lay out one of the profiles shown in the *WOOD PATTERNS*™ insert (or a design of your own) on the cylinders. Turn the body and cap profiles. We used 1/4" and 1/2" gouges and a 1/2" skew. At each end of each piece, turn the wood to the bushing diameter-3/8"-to match the fittings. Take shallow cuts as you approach 3/8" outside diameter; the wood will be only about 1/32" thick.

With the lathe turned off, sand in the direction of the grain with progressively finer grits from 150 to 320. Apply a clear finish to the mounted parts. Note the orientation of the body and cap turnings, then remove them from the mandrel when dry.

Assemble the applicator

Drill a 5/16" hole through a piece of 3/4"-thick scrapwood about 2×3". With double-faced tape, affix the block to the back jaw of your vise.

Refer to the Exploded View drawing, and assemble the applicator body. With your thumb, press the end plug into the end of the body tube that was at the headstock end of the mandrel.

Insert the large wick and nib into the other end. Place the extended tip of the nib into the hole in the block on the vise jaw as shown *above right*. Seat the nib's shoulder on the block, then slowly close the vise to press the nib and end plug into place.

Install the O-ring where shown, and tightly screw the threaded insert for the cap onto the nib.

Place an end plug into the end of the cap tube that was nearest the tailstock. Now, fit the other end over the threaded insert screwed onto the nib. Align the cap grain with the body, then push the cap onto the insert. Carefully unscrew the assembly, and press the parts home with the vise.

Slip the applicator tip into the nib. (It fits loosely at first, but swells when you fill the applicator.) To fill, dip the tip into the fragrance for about a minute. A filling lasts for about a month.

Buying guide

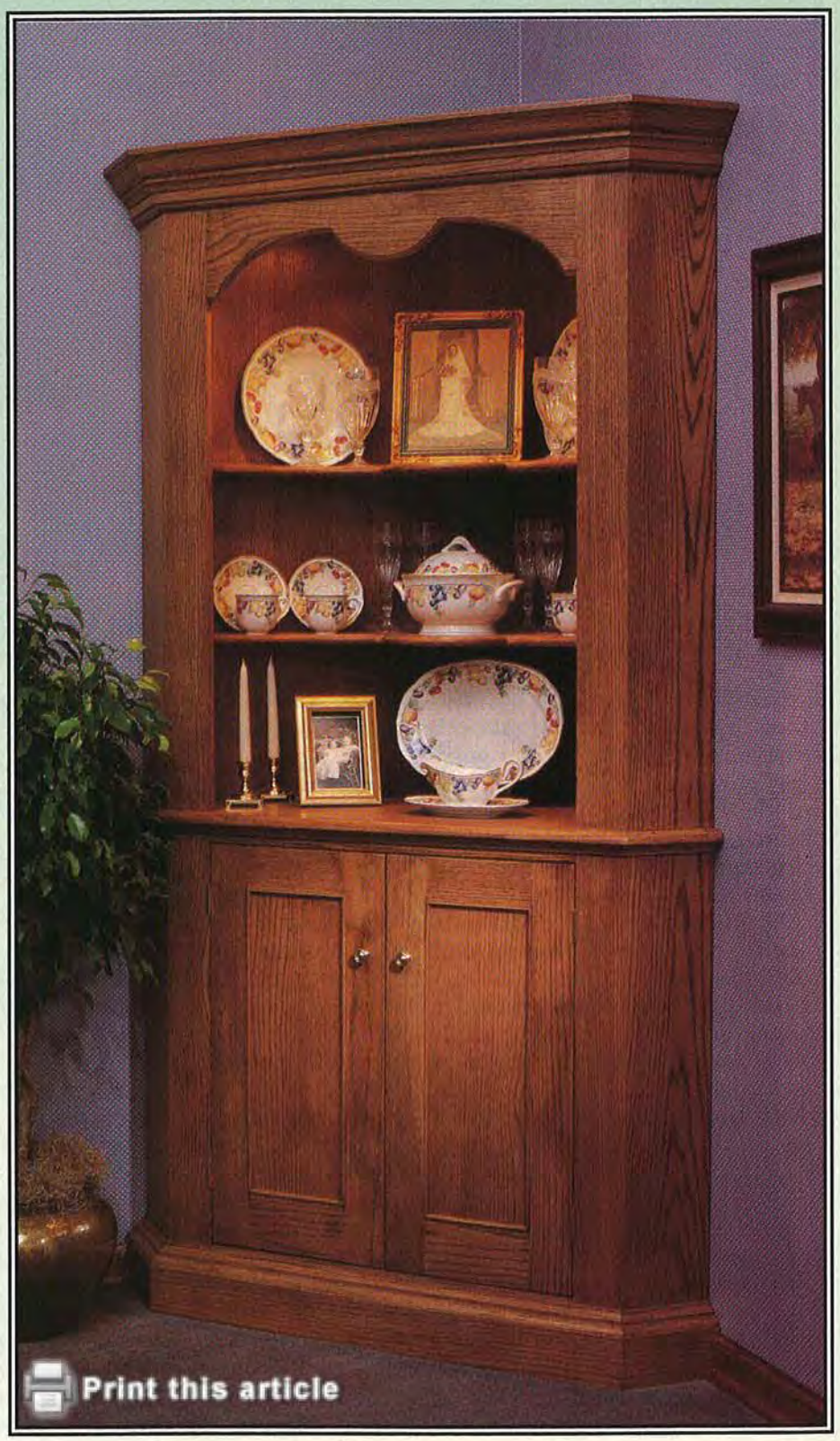
Parts kits, mandrel. Lathe mandrel with 6 applicator kits, $25; mandrel and 10 kits, $30; 5/16" parabolic-flute drill bit (best bit for end grain), $6. All prices ppd. in U.S. Berea Hardwoods Co., 6367 Eastland Rd., Brookpark, Ohio 44142. Or call 216/234-7949.

Project Design: Peach Crafts, Gary Peach
Photographs: John Hetherington; Wm.Hopkins
Illustrations: Kim Downing

A traditionally styled oak cabinet with plenty of personality

CORNER CLASSIC

Family rooms have them, and dining rooms, too–drab, lifeless corners that serve little or no purpose. But with the cabinet featured here, you can say good-bye to dull decorating and hello to one classy furniture piece.



Forming the carcase

1 Rip and crosscut the back panels (A, B) to size from ¾" oak plywood. Because of the joinery used, panel B is slightly narrower than panel A. For ease in machining and assembling the two different-sized panels later, mark an A on the wider panel and a B on the other. (We stuck a piece of masking tape about 1" long on each panel and wrote the letter designation on the tape. Doing this prevents you from having to sand a penciled-on letter off the thin-veneered surface later.)

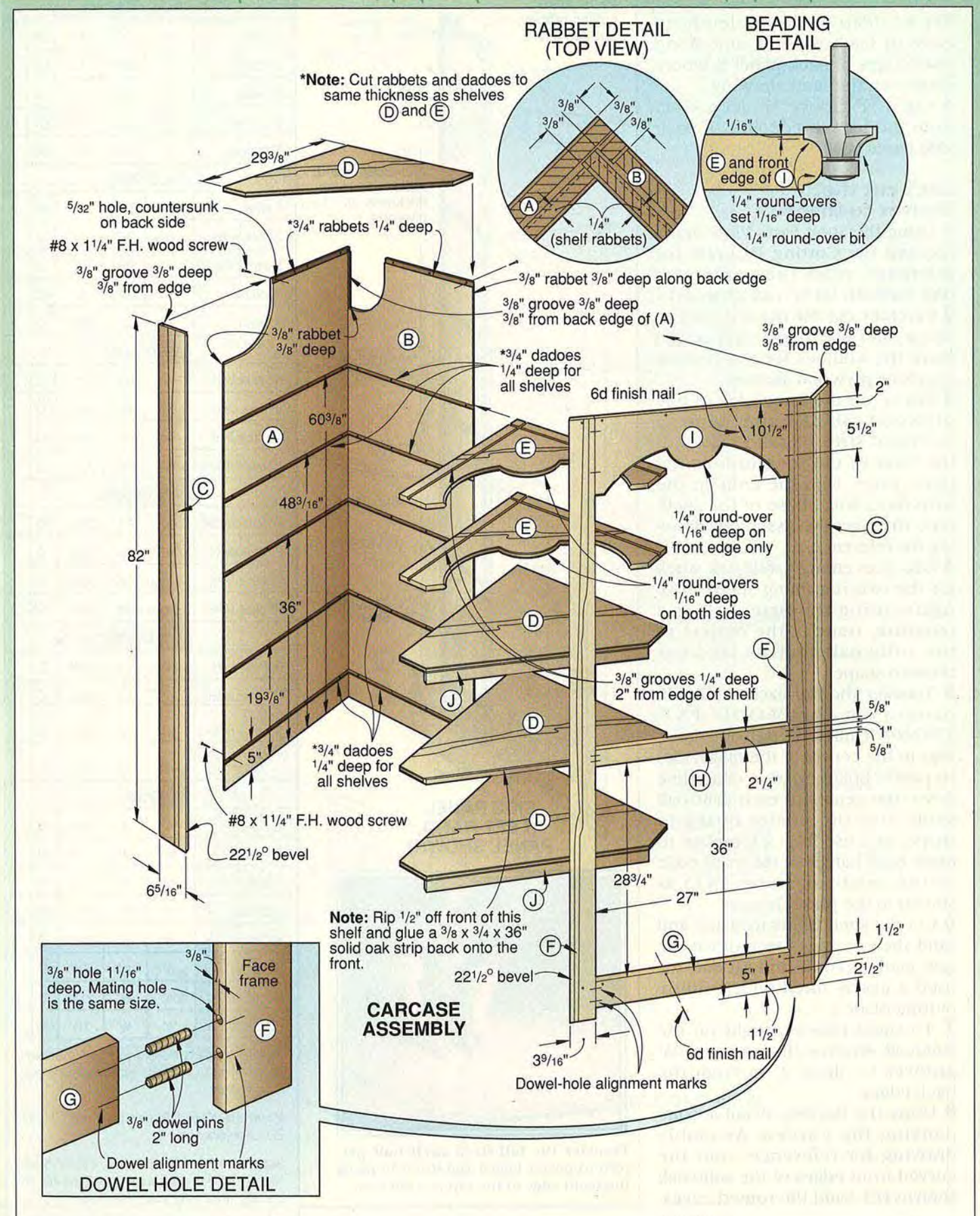
2 From ¾"-thick oak, cut the sides (C) to size *plus ¼" in width*. Mark an X on the outside face of each side panel.

3 Using the Carcase Assembly and Side Panel drawings for reference, lay out the dado locations on the front of each back panel (A, B) and the inside of the sides (C).

4 With a ¾" straight bit, rout ¼"-deep dadoes in each back panel. See the article on routing evenly spaced dadoes (it starts on *page 56*) for a straightforward method of doing this. Clamp the side panels (C) edge to edge, with the good face down, and rout the dadoes across them. Cut a ¾" rabbet ¼" deep across the top end of the back and side panels.

5 Cut a ⅜" groove ⅜" deep ⅜" in from the back edge of back panel A where shown on the Carcase Assembly drawing. Cut a ⅜" rab-

Continued


RABBET DETAIL (TOP VIEW)
BEADING DETAIL
*Note: Cut rabbets and dadoes to same thickness as shelves D and E
3/8"
3/8"
3/8"
3/8"
A
B
1/4"
(shelf rabbets)
1/16"
E and front edge of I
1/4" round-overs set 1/16" deep
1/4" round-over bit
29 3/8"
D
5/32" hole, countersunk on back side
#8 x 1 1/4" F.H. wood screw
3/8" groove 3/8" deep 3/8" from edge
*3/4" rabbets 1/4" deep
3/8" rabbet 3/8" deep along back edge
3/8" groove 3/8" deep 3/8" from back edge of (A)
3/8" rabbet 3/8" deep
B
*3/4" dadoes 1/4" deep for all shelves
3/8" groove 3/8" deep 3/8" from edge
6d finish nail
2"
5 1/2"
10 1/2"
I
60 3/8"
A
E
C
48 3/16"
82"
1/4" round-over 1/16" deep on front edge only
C
E
1/4" round-overs 1/16" deep on both sides
36"
D
F
3/8" grooves 1/4" deep 2" from edge of shelf
19 3/8"
J
D
5/8"
1"
5/8"
H
2 1/4"
5"
*3/4" dadoes 1/4" deep for all shelves
#8 x 1 1/4" F.H. wood screw
D
22 1/2° bevel
36"
6 5/16"
28 3/4"
27"
J
Note: Rip 1/2" off front of this shelf and glue a 3/8 x 3/4 x 36" solid oak strip back onto the front.
F
G
1 1/2"
22 1/2° bevel
5"
2 1/2"
CARCASE ASSEMBLY
1 1/2"
3 9/16"
6d finish nail
Dowel-hole alignment marks
3/8"
Face frame
3/8" hole 1 1/16" deep. Mating hole is the same size.
F
G
3/8" dowel pins 2" long
Dowel alignment marks
DOWEL HOLE DETAIL

bet ⅜" deep along the left-hand edge of back panel A and along *both* edges of back panel B where shown on the same drawing.

6 Cut a ⅜" groove ⅜" deep ⅜" in from the back inside face of each side panel (C).

Let's cut the shelves to shape

1 Using the Shelf Parts View drawing and the Cutting Diagram for reference, mark the outline for one shelf (D) on ¾" oak plywood.

2 Carefully cut the marked shelf to shape, and use it as a template to mark the outlines for the remaining three plywood shelves.

3 Rip ½" off the front edge of *one* plywood shelf, and glue a ⅜×¾×36" strip of solid oak onto the front of the shelf to hide the plies. Later, trim the ends of the strip flush with those of the shelf. (See the Carcase Assembly drawing for reference.)

4 Edge-join enough solid-oak stock for the two remaining shelves (E). Again, using the first shelf as a template, transfer the outline to the solid-oak shelves, and cut them to shape.

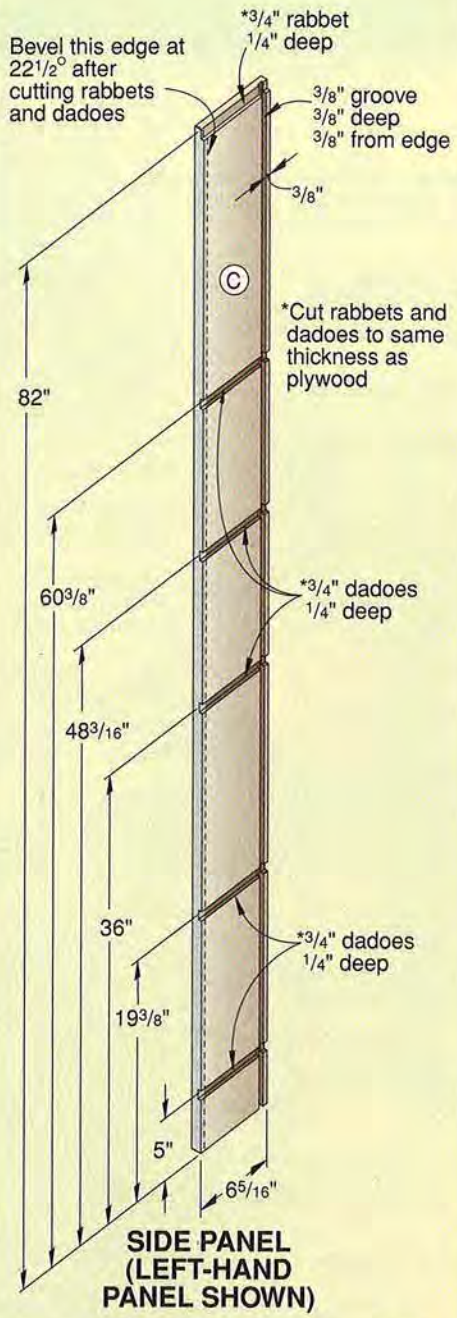
5 Transfer the full-sized shelf half-pattern on the WOOD PATTERNS™ (full-sized pull-out drawings in the center of the magazine) to poster board. Mark a centerline down the center of each solid-oak shelf. Cut the poster board to shape, and use it as a template to mark both halves of the front edge of the solid-oak shelves (E) as shown in the photo *at right*.

6 Cut the shelf fronts to shape and sand the cut edges to remove the saw marks. (For a smooth cut, we used a jigsaw fitted with a finish-cutting blade.)

7 To stand plates upright on the solid-oak shelves (E) later, cut ⅜" grooves ¼" deep 2" in from the back edges.

8 Using the Beading detail accompanying the Carcase Assembly drawing for reference, rout the curved front edges of the solid-oak shelves (E). Sand the routed edges.

Continued



SIDE PANEL (LEFT-HAND PANEL SHOWN)

Transfer the full-sized shelf half pattern to poster board and use it to mark the front edge of the top two shelves.

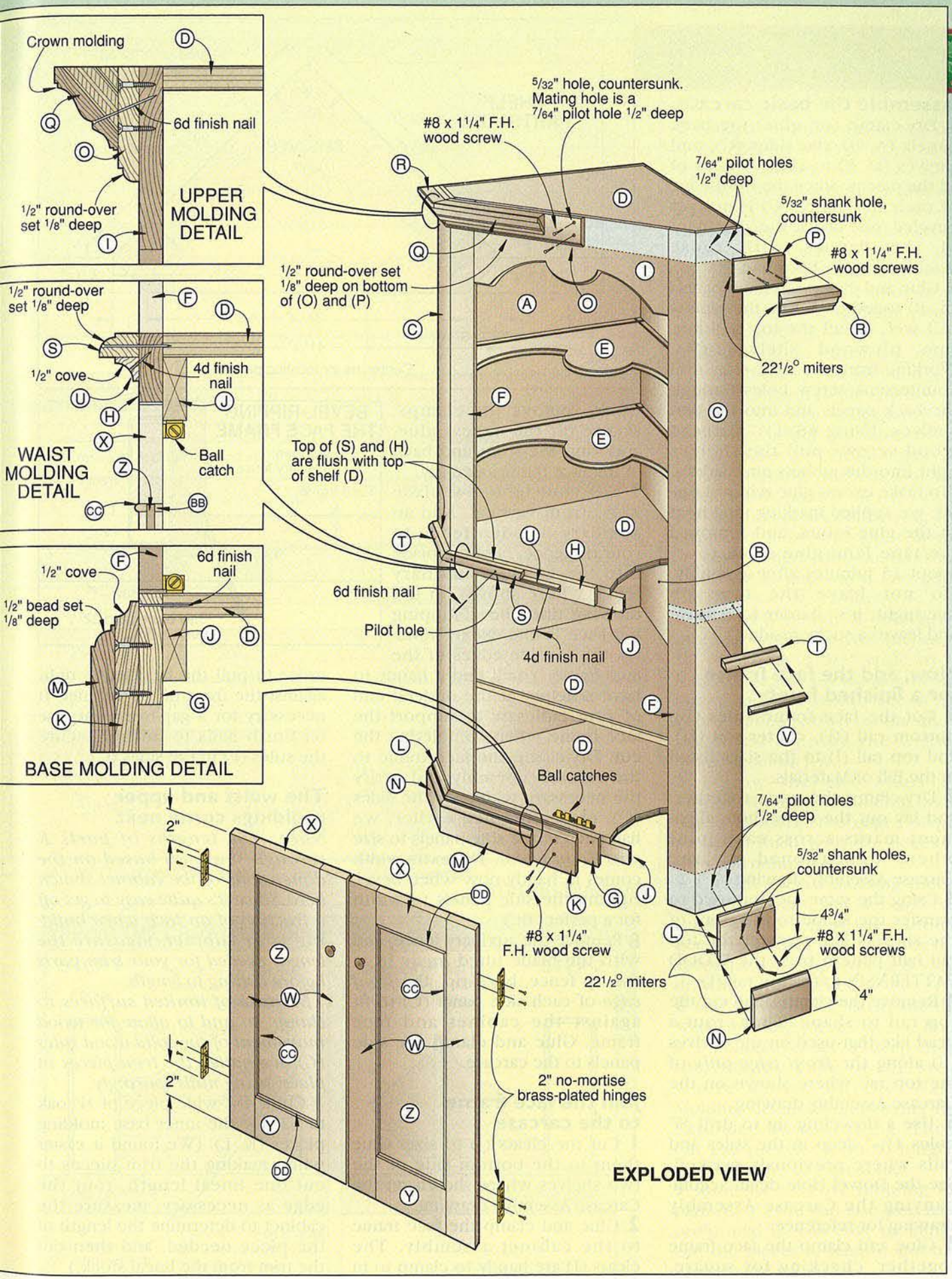
Bill of Materials

Part	Finished Size* T	W	L	Matl.	Qty.
CARCASE ASSEMBLY					
A back	¾"	30"	82"	OP	1
B back	¾"	29⅝"	82"	OP	1
C* sides	¾"	6⁵⁄₁₆"	82"	O	2
D shelves	¾"	24⁷⁄₁₆"	41½"	OP	4
E shelves	¾"	24⁷⁄₁₆"	41½"	EO	2
FACE FRAME					
F stiles	¾"	3⁹⁄₁₆"	82"	O	2
G bottom rail	¾"	3½"	27"	O	1
H center rail	¾"	2¼"	27"	O	1
I top rail	¾"	10½"	27"	EO	1
J cleats	¾"	2"	34⅛"	O	2
BASE MOLDING					
K* inner front	¾"	4¾"	34¾"	O	1
L* inner sides	¾"	4¾"	6⅝"	O	2
M* outer front	¾"	4"	35⅜"	O	1
N* outer sides	¾"	4"	6¹⁵⁄₁₆"	O	2
UPPER MOLDING					
O* inner front	¾"	4⅛"	34¾"	O	1
P* inner sides	¾"	4⅛"	6⅝"	O	2
Q* outer front	crown mold		36⁷⁄₁₆"	O	1
R* outer sides	crown mold		7½"	O	2
WAIST MOLDING					
S* inner front	¾"	1¼"	35⅛"	O	1
T* inner sides	¾"	1¼"	6⅞"	O	2
U* front cove mold	¾"	¾"	34¾"	O	1
V* side cove mold	¾"	¾"	6⅝"	O	2
DOORS					
W stiles	¾"	3"	28¾"	O	4
X rails	¾"	3"	7½"	O	2
Y rails	¾"	4"	7½"	O	2
Z panels	¼"	7⁷⁄₁₆"	21¹¹⁄₁₆"	EO	2
AA* stops	¼"	¼"	21¾"	O	4
BB* stops	¼"	¼"	7½"	O	4
CC* stops	¼"	⅜"	21¾"	O	4
DD* stops	¼"	⅜"	7½"	O	4

*Initially cut parts marked with an * oversized. Then, trim to finished size according to the how-to instructions.

Materials Key: OP–oak plywood, O–oak, EO–edge-joined oak.

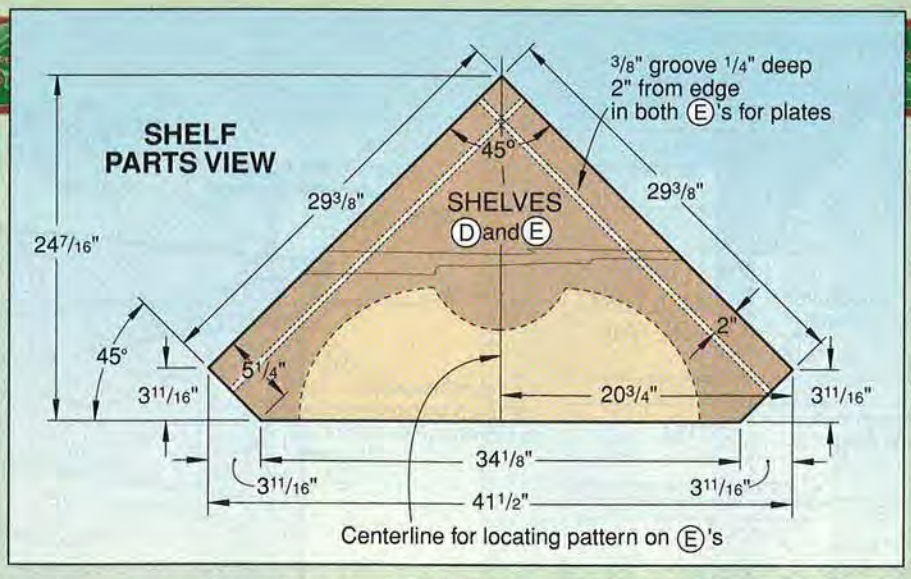
Supplies: ⅜" dowel pins 2" long, #18×⅝" brads, #8×1¼" flathead wood screws, #4d and #6d finish nails, wood putty, stain, clear finish.


Crown molding
D
Q
6d finish nail
O
1/2" round-over set 1/8" deep
I
UPPER MOLDING DETAIL
1/2" round-over set 1/8" deep
F
D
S
1/2" cove
4d finish nail
U
J
H
X
Ball catch
WAIST MOLDING DETAIL
Z
CC
BB
F
6d finish nail
1/2" cove
1/2" bead set 1/8" deep
J
D
M
G
K
BASE MOLDING DETAIL
5/32" hole, countersunk. Mating hole is a 7/64" pilot hole 1/2" deep
#8 x 1 1/4" F.H. wood screw
R
7/64" pilot holes 1/2" deep
5/32" shank hole, countersunk
P
#8 x 1 1/4" F.H. wood screws
1/2" round-over set 1/8" deep on bottom of (O) and (P)
A
C
E
22 1/2° miters
Top of (S) and (H) are flush with top of shelf (D)
T
6d finish nail
Pilot hole
4d finish nail
B
V
Ball catches
L
N
7/64" pilot holes 1/2" deep
5/32" shank holes, countersunk
4 3/4"
#8 x 1 1/4" F.H. wood screw
#8 x 1 1/4" F.H. wood screws
22 1/2° miters
4"
2"
W
Y
DD
2" no-mortise brass-plated hinges
EXPLODED VIEW

Assemble the basic carcase

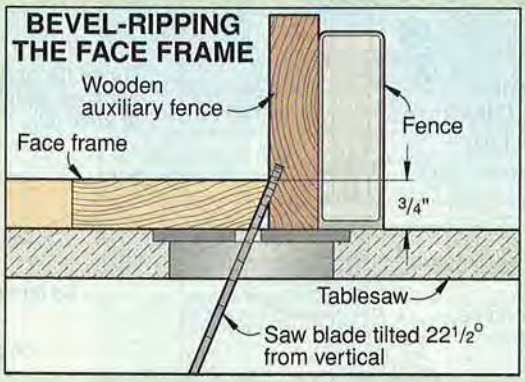
1 Dry-clamp (no glue) the back panels (A, B), the sides (C), and shelves (D, E) to check the fit of all the pieces. Since the front edge of each side piece (C) is not yet beveled, just check the alignment of the dadoes with those machined in the back panels.

2 Glue and clamp the back panels (A, B) together. While the glue is still wet, install the top and bottom plywood shelves (D). Working from the back side, drill countersunk screw holes through the back panels and into the two shelves. Using #8×1¼" flathead wood screws pull the shelves tight into the rabbets and dadoes. (To make excess glue removal easier, we applied masking tape next to the glue joints, and removed the tape [and glue stuck to it] about 15 minutes after assembly. Do not leave the tape on overnight; it's harder to remove and leaves a sticky residue.)



Later, remove the clamps, scrape off the excess glue, and sand the front and back of the face frame assembly.

7 Tilt your tablesaw blade 22.5° from vertical. Add an auxiliary wooden fence to your rip fence, raise the blade into the wooden auxiliary fence where shown on the drawing titled Bevel-Ripping the Face Frame. Next, bevel-rip the outside edges of the face frame. You'll find it handy to have a helper at the outfeed end of your tablesaw to support the face frame when completing the cut. Dry-clamp the face frame to the carcase assembly and verify the necessary width for the sides (C). (As mentioned earlier, we had you cut the side panels to size *plus ¼" in width*. The extra width comes in handy now when bevel-ripping the side panels to width for a perfect fit.)



8 Remove the auxiliary fence, and with the blade tilted *away* from the rip fence, bevel-rip the *front edge* of each side panel (C) to fit against the cabinet and face frame. Glue and clamp the side panels to the carcase.

Now, add the face frame for a finished front

1 Cut the face frame stiles (F), bottom rail (G), center rail (H), and top rail (I) to the sizes listed in the Bill of Materials.

2 Dry-clamp the parts together, and lay out the dowel-hole alignment marks across each joint where dimensioned on the Carcase Assembly drawing.

3 Using the same method used to transfer the shape to the front of the shelves (E), transfer the top rail half pattern from the WOOD PATTERNS™ to the top rail (I).

4 Remove the clamps, and cut the top rail to shape. Then, rout a bead like that used on the shelves (E) along the *front edge only* of the top rail where shown on the Carcase Assembly drawing.

5 Use a doweling jig to drill ⅜" holes 1⅛" deep in the stiles and rails where previously marked. See the Dowel Hole detail accompanying the Carcase Assembly drawing for reference.

6 Glue and clamp the face frame together, checking for square.

Join the face frame to the carcase

1 Cut the cleats (J) to size. Glue them to the bottom side of the two shelves where shown on the Carcase Assembly drawing.

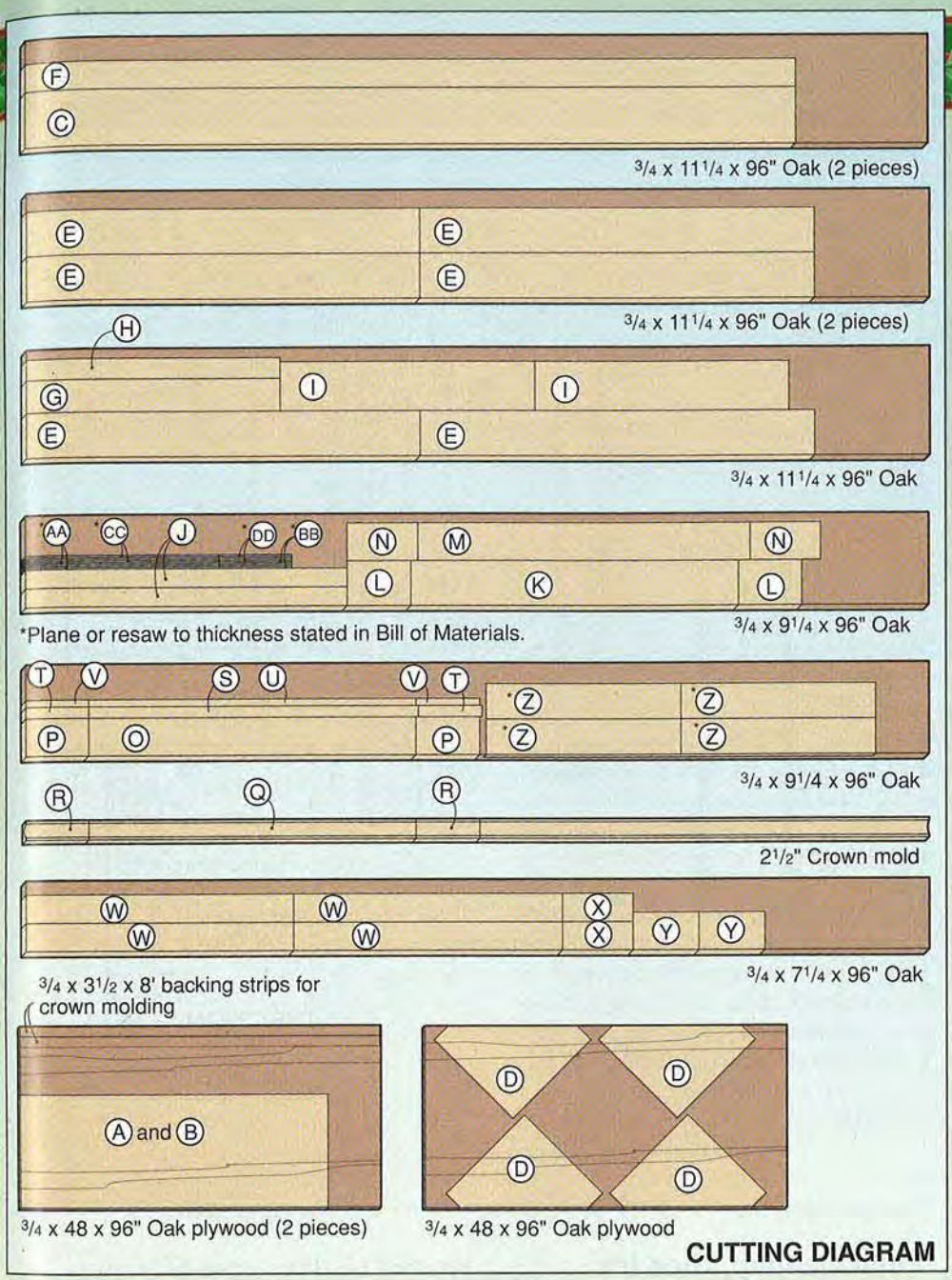
2 Glue and clamp the face frame to the cabinet assembly. The cleats (J) are handy to clamp to in order to pull the face frame tight against the front of the cabinet. If necessary for a gap-free joint, use 6d finish nails to further secure the stiles (F) to the sides (C).

The waist and upper moldings come next

Note: *The lengths of parts K through V are all based on the dimensions of the cabinet shown here. Since it's quite easy to get off a fraction of an inch when building your cabinet, measure the length needed for your trim parts before cutting to length.*

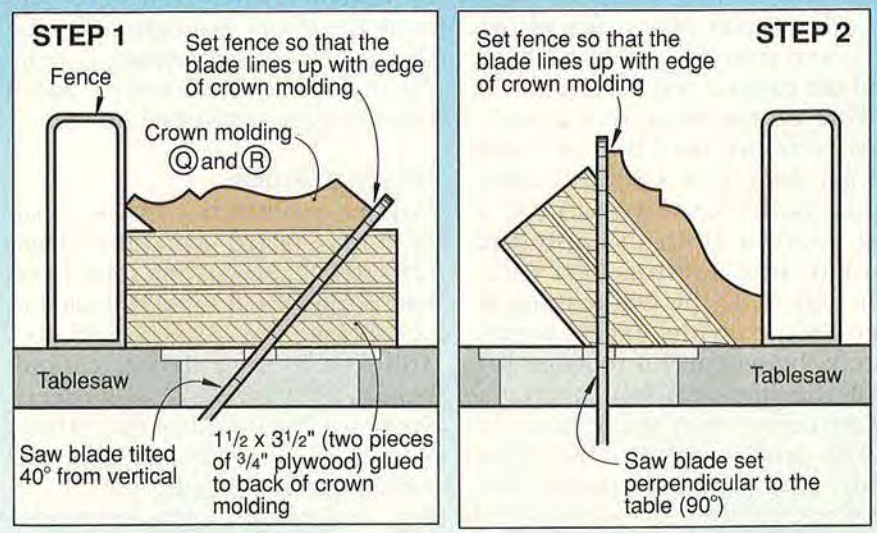
Because of limited surfaces to clamp to and to allow for wood movement of the solid-wood sides (C), we nailed the trim pieces in place, using nails sparingly.

1 Cut a 4¾"-wide piece of ¾" oak to 52" for the inner base molding pieces (K, L). (We found it easier when making the trim pieces to cut one lineal length, rout the edge as necessary, measure the cabinet to determine the length of the piece needed, and then cut the trim from the lineal stock.)



CUTTING DIAGRAM

RIPPING THE CROWN MOLDING


STEP 1
Set fence so that the blade lines up with edge of crown molding
Fence
Crown molding Q and R
Tablesaw
Saw blade tilted 40° from vertical
1 1/2 x 3 1/2" (two pieces of 3/4" plywood) glued to back of crown molding
STEP 2
Set fence so that the blade lines up with edge of crown molding
Tablesaw
Saw blade set perpendicular to the table (90°)

2 Rout a ½" cove along the top front edge of this 52"-long piece where shown on the Base Molding detail accompanying the Exploded View drawing. Miter-cut the pieces to length, drill countersunk screw holes, and screw (no glue) the pieces to the cabinet.

3 Cut a ¾×4×54" piece of stock for the outer base molding pieces (M, N). Rout a ½" bead set ⅛" deep along the top front edge. Cut the pieces to length, and glue and clamp them to the cabinet.

4 Cut a ¾" piece of oak stock for the inner upper molding pieces (O, P). Rout a ½" round-over set ⅛" deep along one edge of the stock where shown on the Upper Molding detail accompanying the Exploded View drawing. Cut the pieces to length, drill countersunk screw holes and screw (no glue) the pieces to the cabinet.

5 Buy an 8' length of oak crown molding. Then, rip two pieces of ¾" plywood to 3½" wide by 8' long. Glue the plywood and the crown molding face-to-face in the configuration shown on the drawing titled Ripping the Crown Molding *below left*.

6 Follow the two steps on Ripping the Crown Molding drawing to bevel-rip the edges of the plywood flush with the edges of the crown molding.

7 Cut the crown molding pieces (Q, R) to length, and glue and nail them to the top of the cabinet. See the Upper Molding detail accompanying the Exploded View drawing for reference.

8 Cut a ¾×1¼×52" strip for the waist molding pieces (S, T). Rout a ½" round-over set ⅛" deep along the outside edge of the strip where shown on the Waist Molding detail accompanying the Exploded View drawing. Then, cut the pieces (S, T) to length, and nail them to the cabinet.

9 Rout the ½" cove molding for parts U, V (you can also purchase preformed ½" oak cove molding). Cut the pieces to length, and nail them to the cabinet.

Continued

A pair of doors enclose the bottom

Note: The dimensions for the door stiles and rails will provide you with a pair of doors that fit in the opening leaving no gap. After building the doors, trim the edges as necessary to accommodate the hinges and create a 1/16" gap top and bottom. We find it easier to build the doors to fill the opening, and trim as necessary.

1 Cut the door stiles (W) and rails (X, Y) to size. Dry-clamp each door together, and transfer the dowel-hole alignment marks across each joint where shown on the Door Assembly drawing.

2 Drill the dowel holes. Glue and dowel each door, checking for square and flatness.

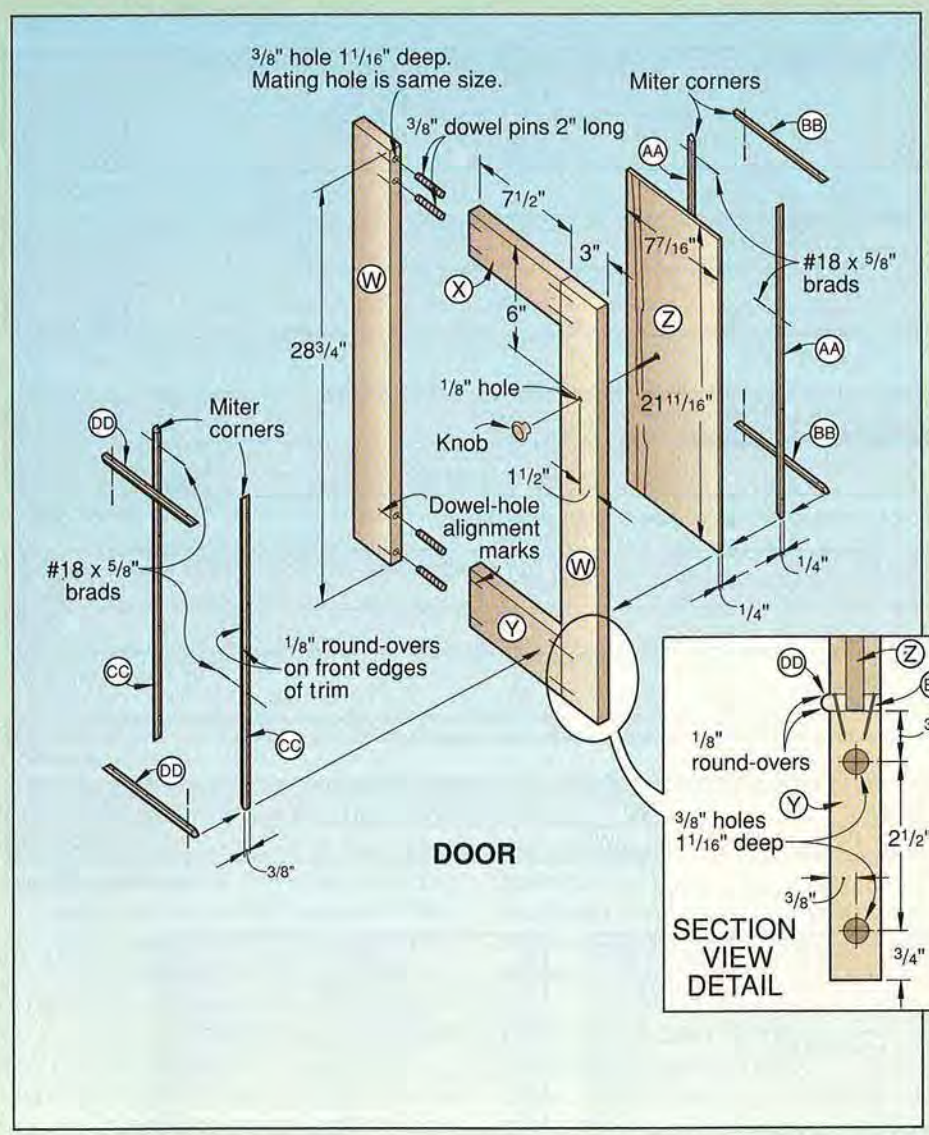
3 Edge-join 1/4" oak (we planed thicker stock) to form the two 1/4"-thick door panels (Z). Later, trim the panels to finished size. Finish-sand the panels, and stain them. (Staining at this point ensures that you won't have any unstained strips along the outside edges later when the panels have had a chance to contract in the frames.)

4 Cut two 1/4×1/4×7' lineal lengths for the back panel stops (AA, BB) and two 1/4×3/8×6' strips for the front panel stops (CC, DD). Rout the front edges of the front panel stop strips where shown on the Section View detail *at right*.

5 Miter-cut the stops to length, stain them, and nail them in place to secure a panel in each door.

6 Mark the centerpoint and drill a hole through each door for mounting the knobs later. (See the Door drawing *at right* for positioning particulars).

7 Attach no-mortise hinges (see the Buying Guide for our source of hardware) to the cabinet and doors. Trim as necessary to fit the doors into the opening with 1/16" gaps top and bottom. Attach the ball catches and strikes to the doors and cabinet where shown on the Waste Trim and Base Molding details accompanying the Exploded View drawing.



Final cleanup, then it's off to the corner

1 Remove all the hardware from the cabinet and doors. Set all the nails, and putty the holes. Finish-sand the cabinet and each door.

2 Wipe on the stain. (For a traditional look, we used Bartley's walnut gel stain. Call 1-800-787-2800 for the dealer nearest you.) Use a clean cotton cloth to apply the stain to one section at a time (don't try to do the whole thing at once). Wipe off the excess immediately, being careful to wipe off with the grain. If you prefer a darker color, stain again after six hours. Buff lightly for an even color. Apply a clear finish (we brushed on three coats of Minwax Fast-Drying satin polyurethane).

3 Reattach the hardware and hang the doors. For lighting inside the upper cabinet (which is helpful in a dimly lit corner), add a cabinet light as sourced *below*.

Buying Guide

Corner cabinet hardware. 2 pair of 2" brass-plated no-mortise hinges (28720), 2 crown top solid brass knobs (35477), 4 brass ball catches (28662). Kit no. 28308, $24.95 ppd. Add $14.95 for a deluxe cabinet light (28316). The Woodworkers' Store, 21801 Industrial Blvd., Rogers, MN 55374-9514. Or call 1-800-279-4441 to order.

Written by Marlen Kemmet Project Design: James R. Downing Photography: John Hetherington Illustrations: Kim Downing, Roxanne LeMoine

Tabletop

REINDEER

These festive accents will steal the show

You may start out cutting just a couple of these adorable little guys, but we'll bet you something. Before you're done, you will have geared up and made a whole herd for your friends and relatives. They make delightful and inexpensive little gifts and work great as seasonal centerpieces.

Print this article

1 Using carbon paper or photocopies of the patterns and spray adhesive, transfer the full-sized body patterns on the *WOOD PATTERNS™* insert in the center of the magazine to posterboard. Cut the patterns to shape to form templates. (Since we planned on making several reindeer, we made templates. If you're making just a set or two, transfer the full-sized patterns directly onto ⅛" stock.)

2 Use the templates to transfer the patterns to ⅛" stock. (See the Buying Guide for our source of void-free birch plywood.)

3 Cut the pieces to shape (we used a scrollsaw and a #2 blade—.029×.012"—with 20 teeth per inch; you also could use a bandsaw equipped with a ⅛" blade). When cutting the notches in the parts, remember that the notch width needs to be the same as the thickness of the stock you're using. (Since we used ⅛" material for our deer, we show ⅛"-wide notches on our full-sized patterns; adjust if necessary.)

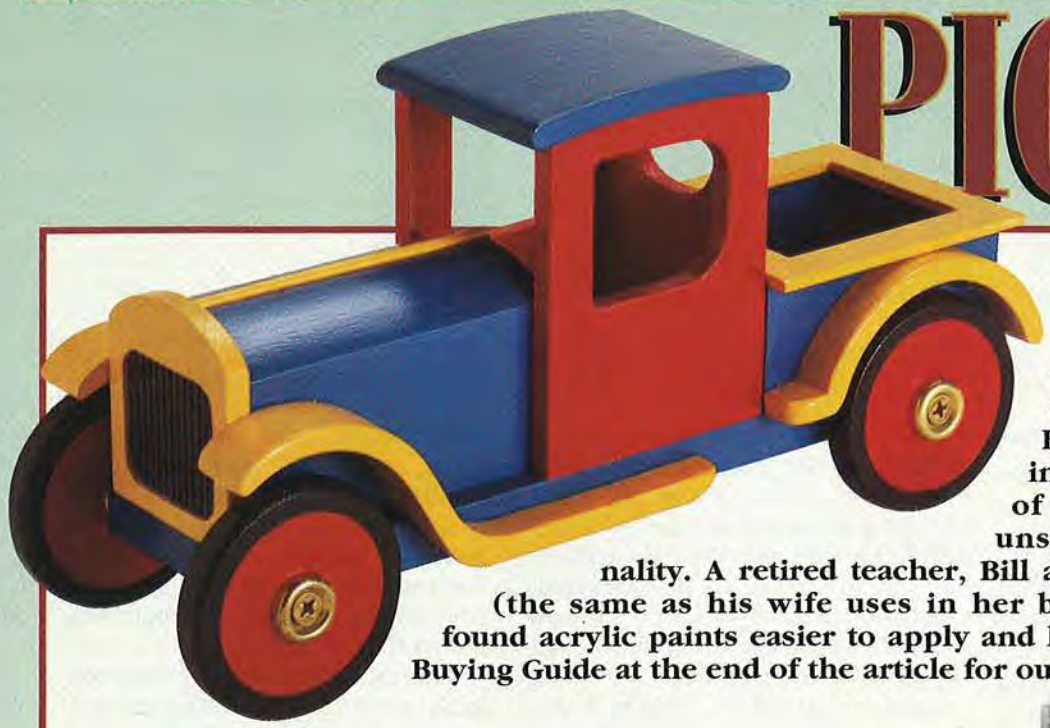
4 Lightly sand the edges and surfaces smooth with 220-grit sandpaper. Assemble each deer (we used a drop of instant glue at each joint to hold the pieces together). Spray on several light coats of gloss enamel. (To avoid runs, we found it essential to apply light coats rather than try to paint the deer with a heavy coat or two.)

Buying Guide

Void-free ⅛" birch plywood ⅛×12×15" (enough for two deer). One piece $5.95 ppd., two pieces for $8.95 ppd., or five pieces (enough for ten deer) for $16.95 ppd. Heritage Building Specialties, 205 North Cascade, Fergus Falls, MN 54537. Call 800/524-4184 to order.

Project Design: George Hans
Photograph: Hetherington Photography
Illustrations: Roxanne LeMoine

PICKUP



Bill Trumble of Grants Pass, Oregon, designed and built this flashy little truck specifically for our Build-A-Toy® contest. He did such an outstanding job he won $300 worth of Behlen finishes for his unselfish efforts and originality. A retired teacher, Bill applied paste food colors (the same as his wife uses in her baking) to his truck. We found acrylic paints easier to apply and less likely to run. See the Buying Guide at the end of the article for our source of paints.

Print this article

***Note:** We used thin stock for this project. You can resaw or plane thicker stock to the thicknesses listed in the Bill of Materials.*

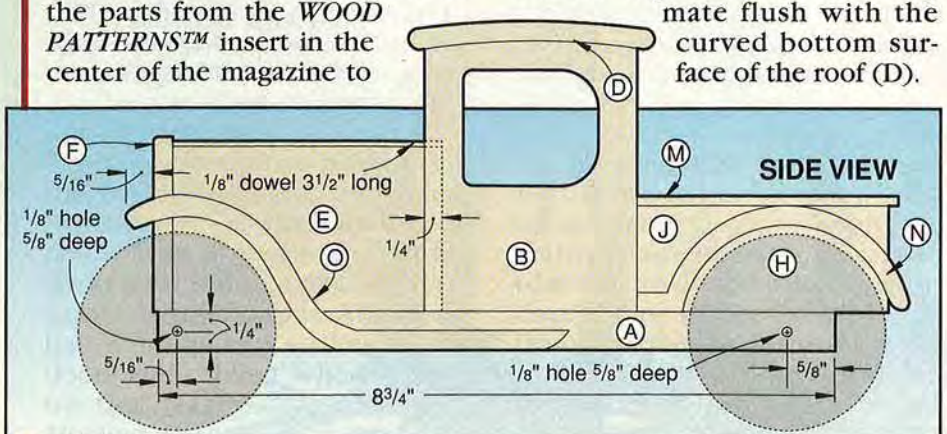
Build up from the chassis

1 Cut the chassis (A) to the size listed in the Bill of Materials.

2 Mark and drill the four ⅛" axle holes ⅝" deep in the chassis where dimensioned on the Side View drawing *below*.

3 Plane or resaw thicker stock to obtain ¼"-thick pine for the cab sides (B) and cab back (C). Using a photocopy and spray adhesive, transfer the full-sized patterns for the parts from the *WOOD PATTERNS™* insert in the center of the magazine to the ¼" stock. Scrollsaw or bandsaw the pieces to shape. Then, drill blade start holes and cut the window openings to shape.

4 Cut the roof blank (D) to the size listed in the Bill of Materials. Transfer the full-sized roof side-view pattern to the blank and cut it to shape. (As shown in the photo *below right*, we used double-faced tape to adhere a piece of scrap 2×4 stock to the roof blank to act as a handle when cutting the roof to shape. We found this much safer than trying to cut the piece without support.) Check that the top of the cab sides (B) mate flush with the curved bottom surface of the roof (D).



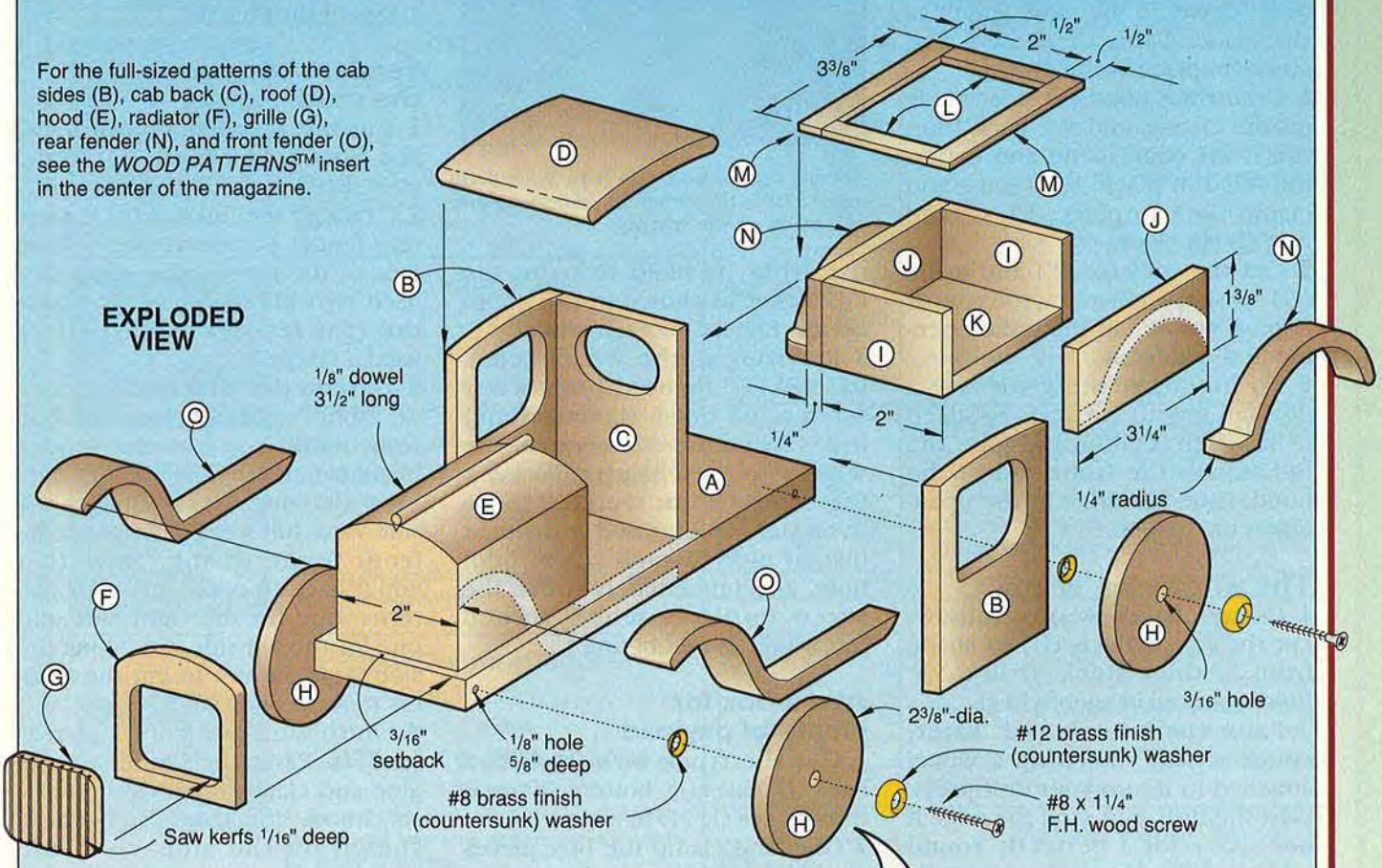
***Note:** To finish the truck as seen in the photo* above left, *paint the pieces (except on the surfaces where they'll be glued to another piece) with acrylic paints before assembling them. When we painted the pieces with acrylic paints, we masked the mating areas with masking tape before painting. Then, we glued the pieces together with woodworker's glue. You also can paint all the surfaces of the pieces and glue the parts with instant glue (cyanoacrylate).*

Continued

Use a scrap block to support the roof blank when cutting the roof to shape.

FROM THE PAST

For the full-sized patterns of the cab sides (B), cab back (C), roof (D), hood (E), radiator (F), grille (G), rear fender (N), and front fender (O), see the *WOOD PATTERNS*™ insert in the center of the magazine.



Bill of Materials

Part	Finished Size T	W	L	Matl.	Qty.
A chassis	½"	2½"	8¾"	P	1
B cab sides	¼"	2¾"	3½"	P	2
C cab back	¼"	2"	3⅜"	P	1
D* roof blank	¾"	2½"	3¼"	P	1
E hood	2"	2⅛"	3½"	LP	1
F radiator	¼"	2"	2¼"	P	1
G grille	3/16"	1½"	1⅜"	P	1
H wheels	⅜"	2⅜"-diam.		P	4
I box front & back	¼"	1⅜"	2"	P	2
J box sides	¼"	1⅜"	3¼"	P	2

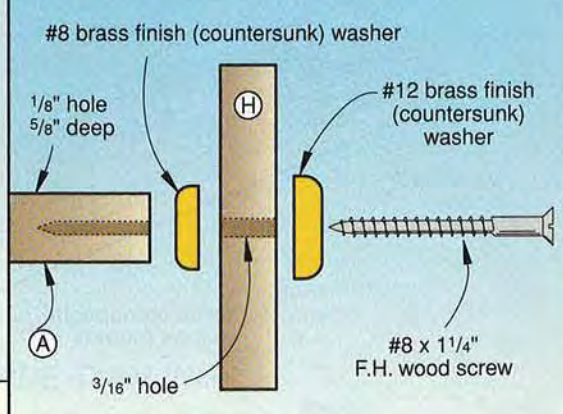
Part	Finished Size T	W	L	Matl.	Qty.
K box bottom	¼"	2"	2¾"	P	1
L trim	⅛"	½"	2"	P	2
M trim	⅛"	½"	3⅜"	P	2
N* rear fender blank	½"	1½"	8"	P	1
O* front fender blank	¾"	2¼"	12"	P	1

* Initial size

Materials Key: P–pine, LP–laminated pine

Supplies: 4–#8 brass finish (countersunk) washers, 4–#12 brass finish (countersunk) washers, 4–#8×1¼" flathead brass wood screws, ⅛" dowel stock, acrylic paints (listed in Buying Guide at the end of the article).

WHEEL DETAIL



5 Laminate thinner stock to form the 2"-thick hood (E). Trim to length, transfer the pattern to the front end, and bandsaw or sand the top of the hood to shape. Cut a slight groove down the top center of the hood. Bandsaw a piece of ⅛" dowel to the same length as the hood. Paint the dowel and glue it in place in the groove.
6 Center the hood (E) side-to-side on the chassis and 3⁄16" back from the front edge. Glue and clamp the hood in place. Later, glue and clamp the cab pieces (B, C) and roof (D) in place.
7 Cut the radiator (F) and grille (G) to shape. Use a scrollsaw or coping saw to cut the grille opening in the radiator.
8 To highlight the grille use a dovetail saw to cut kerfs 1⁄16"-deep in it. Then, center and glue the radiator to the front end of the hood. Glue the grille in the opening in the radiator.

The wheels let 'er roll

1 Using a bandsaw or scrollsaw, cut the four wheels (H) to shape from 3⁄8"-thick stock. Drill a 3⁄16" hole centered in each wheel.
2 Paint the wheels red. Later, chuck a 3⁄16×2" bolt with a wheel attached to it into your drill press. Start the drill, and sand the edge if necessary for a perfectly round wheel. Stop the drill and rotate the arbor by hand to paint the black rims as shown in the photo *above*. Repeat for each wheel.

Secure a wheel on a bolt in your drill press. Turn the chuck by hand to paint the black on the wheels.

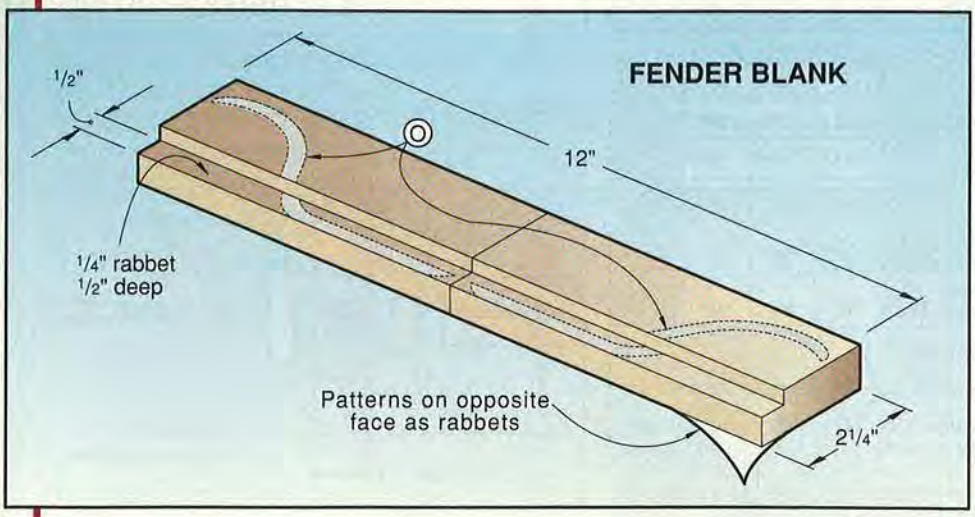
3 Referring to the Wheel detail, use #8×1¼" flathead brass wood screws and finish (countersunk) brass washers to secure the wheels to the chassis. (To keep the screws from working loose over time, we added a drop of instant glue to each screw pilot hole, and immediately drove the screw until the wheel turned freely without wobbling.)

Add a box for plenty of payload

1 Cut the truck box front and back (I), sides (J), bottom (K), and trim pieces (L, M) to size.
2 Glue and clamp the box pieces (I, J, K), being careful not to scratch the soft pine, and scrape off the excess glue. Then, glue the trim pieces (L, M) in place.
3 Center and glue the box to the chassis directly behind the cab. The outside surfaces of the box should be flush with the outside edges of the chassis.

Fenders keep down the mud

1 Cut the rear fender blank (N) and front fender blank (O) to the sizes listed in the Bill of Materials.
2 Transfer the full-sized side view rear fender pattern to the outside face of the rear fender blank (we used two photocopies). Bandsaw the rear fenders to shape (we used a ⅛" blade).
3 To form the front fenders, cut a ¼" rabbet ½" deep along the bottom inside edge of the fender blank where shown on the Parts View drawing. Next, transfer the side view full-sized patterns to the front fender blank. Note that you'll have to make a pair of patterns; one for the right side and one for the left side. Cut along the side view pattern to cut the fenders to shape.
4 Finish-sand the front and rear fenders. Paint the fenders, then, glue and clamp them to the chassis, hood, and truck box where shown on the Side View and Exploded View drawings.



Buying Guide

Paint. Two-ounce bottles of Delta Ceramcoat crimson 02076 (red), yellow 02504, copen blue 02051, and black 02506. $1.99/bottle, plus $3.50 postage and handling per order. Meisel Hardware Specialties, P.O. Box 70W, Mound, MN 55364. Credit card orders, call 800/441-9870.

Produced by Marlen Kemmet
Project Design: Bill Trumble
Illustrations: Roxanne LeMoine
Photographs: John Hetherington

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Set includes: C1001, C1003, & C1004 Double Fluted Straight, C1044 Rabbeting, C1069 Dovetail, C1080 Flush Trimming, C1129 Chamfer, C1143 Cove, C1154 Roman Ogee & C1179 Roundover

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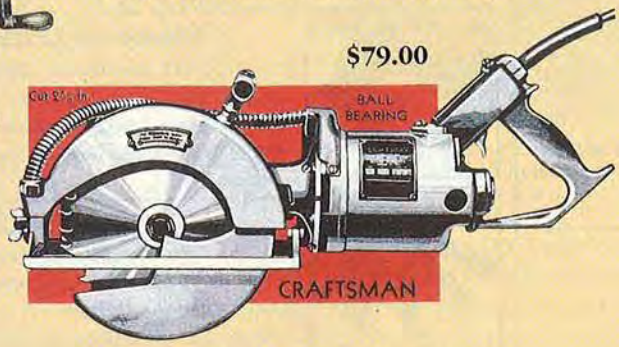
Sources: *Sears Catalog, Spring 1928; Sears Electric Power Tools and Shop Equipment, 1931*

Editor's Note: Wouldn't it be a blast being able to order at these prices today? One thing that actually has gotten less expensive over time is the circular saw, especially considering the fact that back then you got a motor that developed only ½ hp.

$79.00



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Source: *Sears Catalog, Fall 1920*

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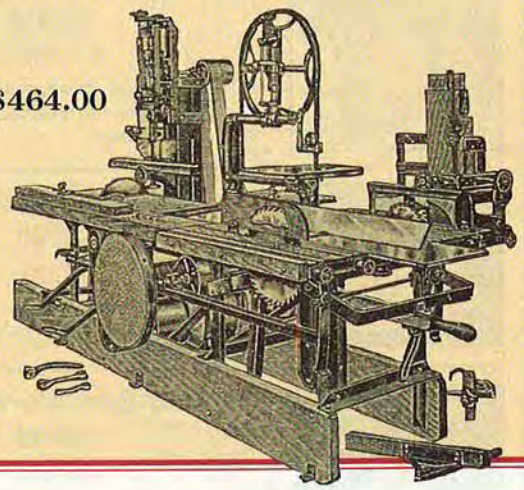

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14" x 40T x 1"	~~$215~~	$149
14" x 30T x 1"	~~195~~	139
12" x 40T x 1"	~~183~~	129
12" x 30T x 1"	~~162~~	119
10" x 40T x 1/8" or 3/32"	~~156~~	119
30T 1/8" or 3/32"	~~135~~	99
9" x 40T	~~146~~	109
30T	~~125~~	99
*8-1/4" x 40T 3/32"	~~136~~	99
8" x 40T 3/32"	~~136~~	99
30T 3/32"	~~115~~	89
7-1/4" x 30T 3/32"	~~112~~	69
**NEW 6" x 40T 3/32"	~~136~~	89

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4"	$21
5"	24
6"	25

FULL RANGE OF OTHER INDUSTRIAL SIZES

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Wood Magazine test, Sept., '93, pg. 45.

Dear Sirs,
Never before had I seen your blade in action, but I wouldn't have belived it if I had not seen it! I was so impressed with the glass-like cut the Woodworker II blade made on various wood types that I went to "Woodworking Unlimited" the next day and bought your dado set!!

David Sharp
Sugar Land, Texas

Mr. Forrest,
YOU ARE THE BEST! Your blades are the best! Your service is the best! Your sharpening of my (cheap) dado set made it a new set. It's a pleasure to do business with you- (I have told this to all of my friends, colleagues and family.)

Herbert Needlman
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Gentlemen,
I have used many different blades during my forty plus years of working, there is absolutely no comparison to any other blades on the market and your WW I & II blades.

Kenneth L. Salisbury
Huntsville, AL 35811

The One Blade That Leaves A Smooth-As-Sanded Surface!!!

(From Another Customer)

In closing I would like to add that the Woodworker II blade is by far the finest saw blade that I have ever used. I also have the Forrest dado set which is without a doubt, the king of all dado sets. I work exclusively with red oak and oak veneer plywood and the dado set performs splinter free cuts as advertised.

It is a pleasure to purchase a product that does what it is advertised to do. Thanks for making such a fine product.

Dennis R. Schule, Owatonna, MN

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Delta	9" x 80T x 5/8"	204	119
Ryobi-Makita & all	10" x 80T x 5/8"	207	129
Makita, B&D, DeWalt & Hitachi	12" x 80T x 1"	229	139
Ryobi-Makita	14" x 100T x 1"	266	179
Hitachi	15" x 100T x 1"	277	189

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Use small stiffener where possible

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***Note:** Fine Woodworking Editorial Nov./Dec. 1988 No. 73, pg. 65, S.N. recommends high alternating top bevel (ATB) thin kerfs and large blade stiffeners for smoothest cuts on RADIAL SAW, etc.*

Jim Forrest, President and designer microscoping cutting edge.

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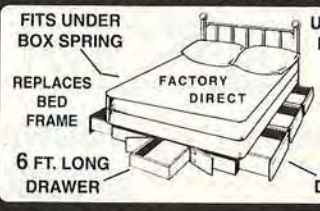

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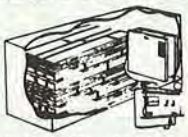

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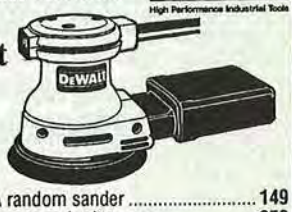

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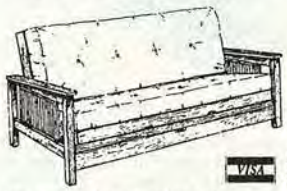

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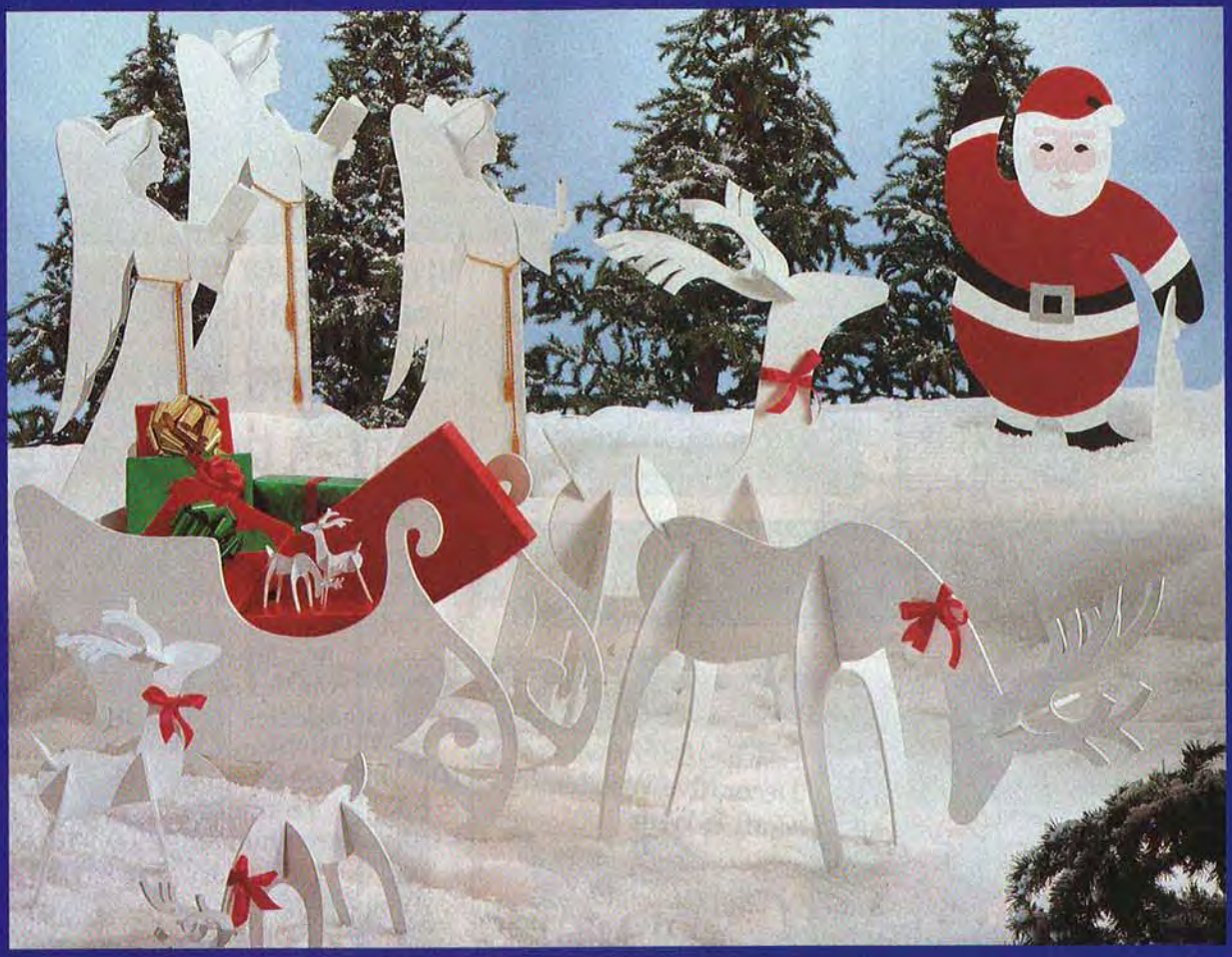

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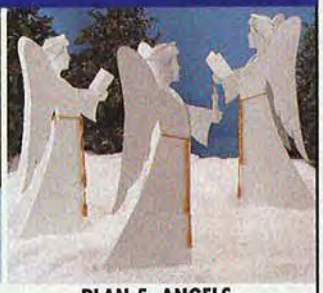

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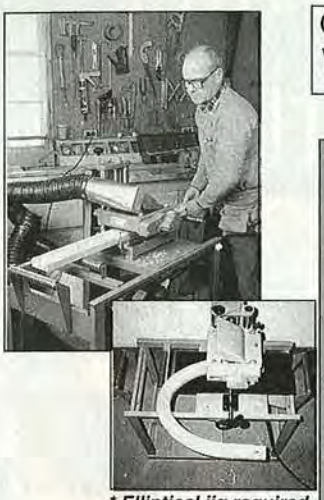

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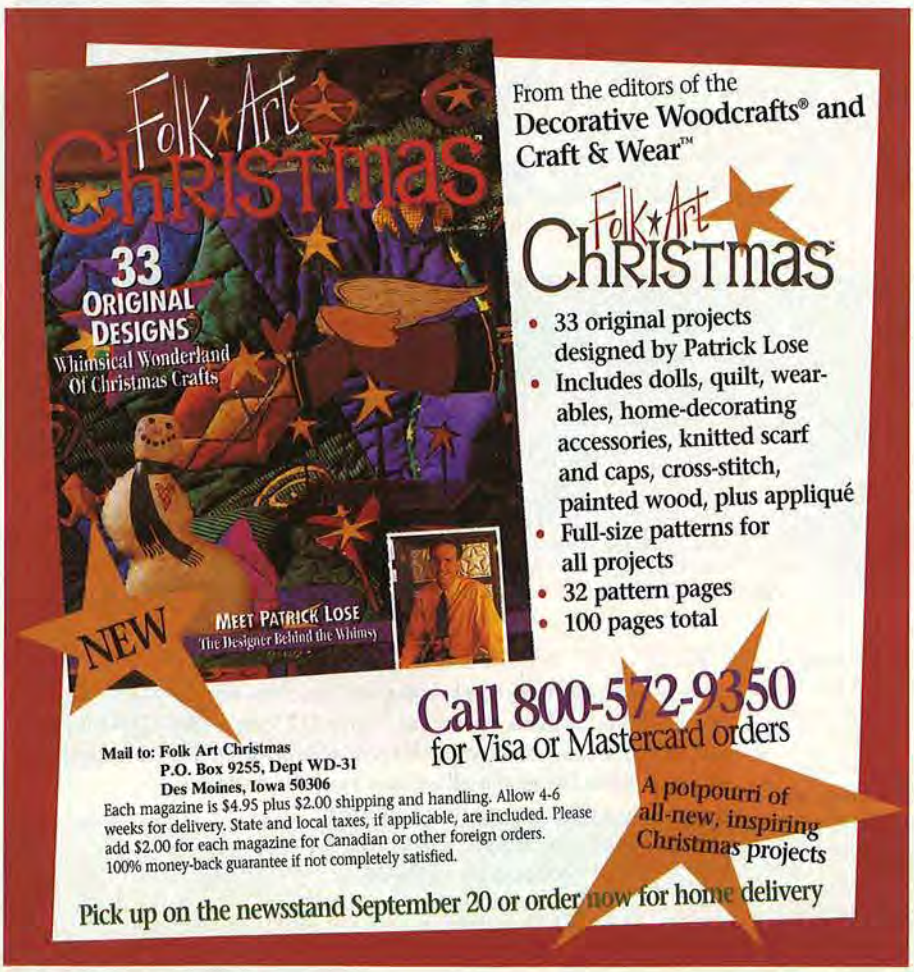
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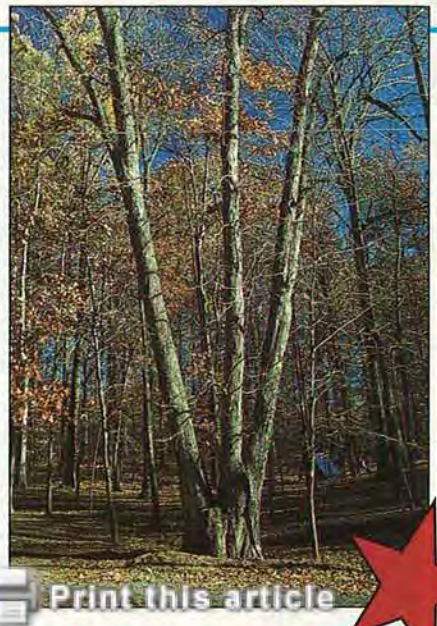

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WOOD ANECDOTE

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THE BASKET OAK

KING COTTON'S TREE

When cotton was king in the Old South, the wood of the basket oak showed up in the fields as wagons, tool handles, and picking containers.

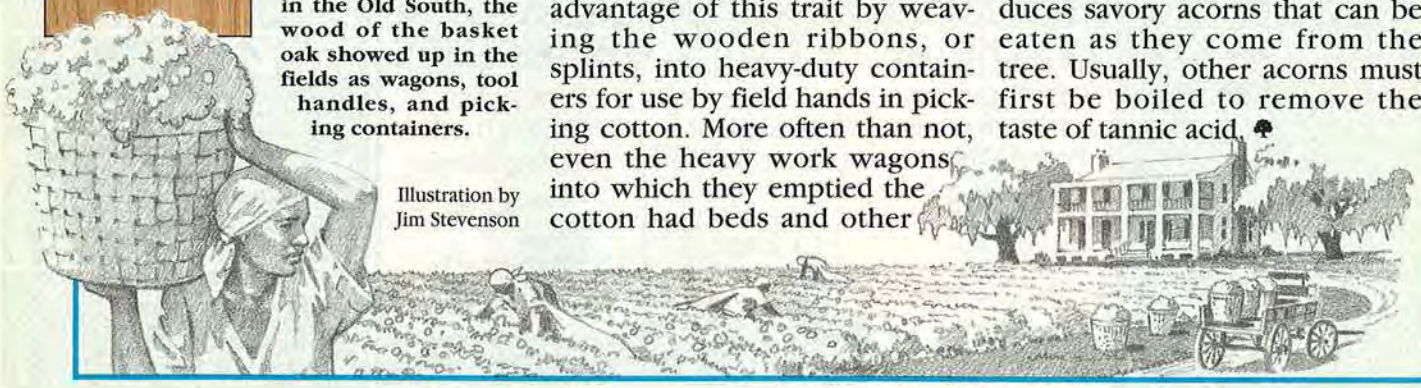

Illustration by Jim Stevenson

Of all the North American oaks (and there are dozens of species), none is so closely tied to the history of the Deep South as the basket oak. In the once-great cotton fields of the Mississippi River delta region, *Quercus michauxii*, a type of white oak, did yeoman's work.

Because the wood of the basket oak has a tendency to split cleanly along its growth rings, it yields rugged ribbons of fiber. Southern basketmakers took advantage of this trait by weaving the wooden ribbons, or splints, into heavy-duty containers for use by field hands in picking cotton. More often than not, even the heavy work wagons into which they emptied the cotton had beds and other parts made from the same strong oak. Sometimes, the handles of the hoes, shovels, scythes, and pitchforks used in the fields were of basket oak, too. The wood ranks next to hickory in surviving strain and shock, and thus frequently replaced it.

Yet, for all of its toughness, the basket oak has a sweet side, too. Hogs, cows, and country children below the Mason-Dixon line know that the basket oak, unlike most of its cousins, produces savory acorns that can be eaten as they come from the tree. Usually, other acorns must first be boiled to remove the taste of tannic acid.

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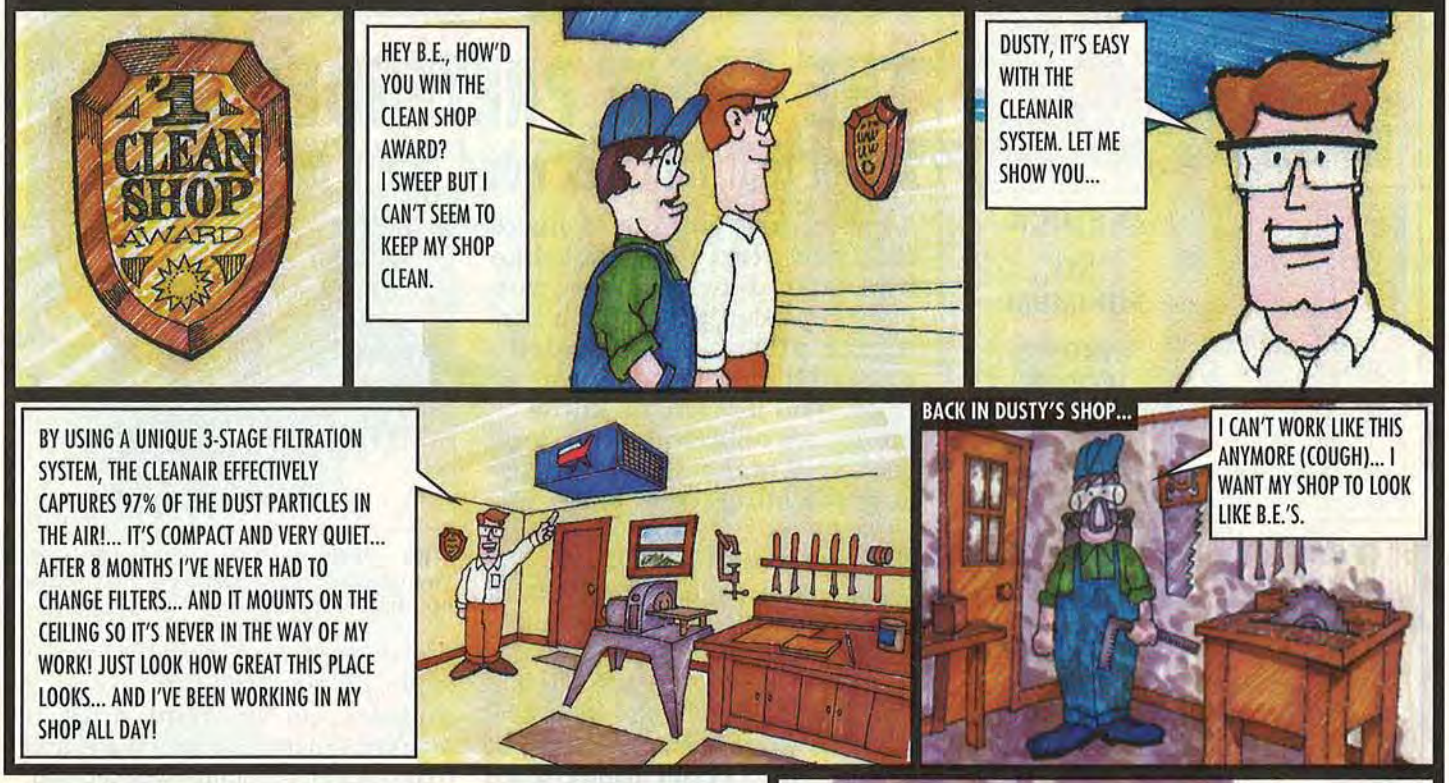
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THE FINISH LINE

THE GREAT PRETENDER

A tool that imitates wood grain

With a little stain and a graining tool, you can match an existing grain pattern on plain wood or a nonwood surface.

Ever wished you could make that new steel door look like a wooden door? Or, have you ever replaced a part in a furniture piece and struggled to match the wood grain? If so, you'll want to know about an amazing little tool that can make you a master at duplicating wood grain.

An all-around imitator

It's called a graining tool (about $5 at some paint stores), and it performs magic by simulating a grain pattern on any smooth surface that will take wood stain. The one we tried had a simple design—just a plastic handle fitted with a rubberlike contoured pad.

But look closer and you'll see one pad edge ends in a row of 28 narrow, flexible teeth. These let you create fine parallel lines or vein graining. The opposite edge has six angled notches for simulating the grain of quarter-sawn wood. (The removable plastic handle lets you switch from using one end to using the other.) On the surface of the pad are semicircular ribs for making knotty patterns.

First, prepare your work surface

To use the graining tool, first prep your surface. Remove any loose material, sand in the direction of the grain (if working with wood), wipe with mineral spirits, and let dry. Then, seal the wood with a coat of thinned urethane varnish (not sanding sealer). This will keep more stain on the surface, where the tool can work it.

Actually, if you're new to woodgraining, you should prepare a second piece of scrap material to practice on, too. You'll get the hang of it after 30 minutes of practice. Here's how to master the art of wood grain imitation.

Photograph: Wm. Hopkins

First, wipe on a uniform coat of stain, being careful not to let it puddle. Let it stand until it becomes slightly tacky. (We found that thicker gel stains worked fine for graining right out of the can.) Then, starting at the top of the surface, slowly pull the tool down.

You'll find graining easier if your surface is horizontal. For the most convincing results, make wide or narrow straight graining first, and add any knot graining last.

Mastering the technique—it's all in the wrist

We found the real trick to graining depends on the amount of pressure you apply as you draw the tool down the surface. There's that, and not letting the tool flood with too much buildup. To create a knotty pattern, you'll need to rock the tool back and forth as you move it—something that requires careful wrist action for convincing results. If your first efforts aren't perfect, don't worry. You can wipe your surface clean with paint thinner and start over.

When you do get it right, let the stain dry for 24 hours. Then, sand lightly and wipe with mineral spirits. Once the surface dries, apply a second coat of stain, using as little as needed to achieve the desired darkness. Add a topcoat of polyurethane for protection.

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WOODWORKER'S RESOURCE

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6.....$2.00	93.....$1.00	480.....$1.00	925 .....Free	1245 .....Free	1427.....$3.00	2150.....$1.00
10 .....Free	94.....$2.00	510.....$1.00	955 .....Free	1250 .....Free	1661.....$2.00	2190.....$2.00
15 .....Free	110.....$1.00	512 .....Free	960 .....Free	1251 .....Free	1795.....$1.00	2191 .....Free
20.....$1.00	160.....$1.00	513.....$1.00	965 .....Free	1267 .....Free	1900.....$1.00	2250 .....Free
35 .....Free	190.....$1.50	515.....$1.00	1002 .....Free	1285 .....Free	1910.....$5.00	2335 .....Free
44 .....Free	210.....$1.00	592.....$1.00	1010.....$1.00	1310 .....Free	1915 .....Free	2450.....$1.00
48.....$1.00	315.....$1.00	598.....$1.00	1035 .....Free	1315 .....Free	1920.....$4.50	4000.....$24.97
49 .....Free	330.....$3.00	615.....$6.00	1075.....$1.00	1318 .....Free	1985.....$1.00	
78.....$1.00	345.....$3.00	820.....$1.00	1115.....$1.00	1320 .....Free	2030.....$1.00	
84 .....Free	401.....$2.00	830.....$2.00	1120 .....Free	1321 .....Free	2077.....$1.00	
86 .....Free	445.....$2.00	855.....$4.00	1228 .....Free	1322.....$1.00	2090 .....Free	

Name (please print) _____

Address _____

City _____

State _____ Zip Code _____

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$ _____ total remittance

ORDER 1-800-328-0457 MAIL ORDER HOURS M-F 7:00-5:30 C.S.T. SAT 8:00-1:00

DELTA TOOLS

Model	Description	List	Sale
23-700	Wet/Dry Grinder	234	155
23-680	6" Bench Grinder 1/4 HP	86	75
11-950	8" Drill Press	199	135
31-050	1" Belt sander 2.0 amp	104	75
31-460	4" Belt/Disc Sander	198	129
31-340	1" Belt/8" Disc Sander	268	204
40-560	16" 2 speed Scroll Saw	266	178
11-990	12" Bench Drill Press	276	195
11-090	32" Radial Bench Drill Press	399	305
43-355	3/4" Shaper 1-1/2 HP	964	759
43-505	1/2" Bench Router/Shaper	399	285
22-540	**12" Bench Top Planer**	Sale	389
36-220	10" Compound Mitre Saw	350	229
28-180	Bench Band Saw	232	158
28-190	NEW 12" Band Saw	465	389
40-640	20" Bench Scroll Saw	466	295
37-070	NEW 6" v/spd Bench Jointer	337	249
14-650	Hollow Chisel Mortiser	668	279
46-700	12" Wood Lathe	548	445
33-990	10" Radial Arm Saw	818	645
37-280	6" Motorized Jointer	488	389
50-179	3/4 HP 2 stage Dust Collector	483	345
33-055	8-1/4" Sawbuck comp w/legs	865	615
34-330	8-1/4" Table Saw 13 amp	343	245
32-100	Stationary Plate Jointer	645	255
36-340	8-1/4" Compound Mitre Saw	224	149
34-915	30" Unifence	385	229
34-897	50" Delta Unifence	525	285
36-755	10" Tilt Arbor Saw	1264	969
34-444	Contractors Table Saw	812	619
17-900	16-1/2" Floor Drill Press	462	399
33-060	"Sidekick" Miter Saw	510	375
14-070	14" Floor Drill Press	450	349
37-190	NEW 6" Deluxe Jointer	554	479
36-275	NEW 8-1/4" Builders Saw	444	265
36-210	NEW 10" Compound Mitre Saw	438	255
36-070	NEW 10" Mitre Saw	284	169

The following Delta Tools have Rebates !
Rebates start 9-15-94
$50 Rebate

28-283	14" Band Saw w/enc. stand	910	745
28-283K	28-283 Saw w/28-843 rip fence	Sale	789
34-445	34-444 Saw w/30" Unifence	1200	775
34-445K	34-445 Saw w/34-914 table board		809

$75 Rebate

22-661	13" Planer w/ 2HP motor	1513	1189
37-154	DJ15 6"Jointer w/3/4HP motor	1451	1165

MILWAUKEE TOOLS

6527	NEW Sawzall with case	320	172
6528	above Sawzall w/wired cord	316	172
0407-1	**12V Drill w/kyls chuck & 2 batt**		172
0395-1	9.6V cordless Drill with case	290	158
0224-1	3/8" Drill 4.5 amp magnum	227	124
0234-1	1/2" Drill 4.5A mag 0-850 rpm	237	128
0244-1	1/2" Drill 4.5A mag 0-600 rpm	237	128
0222-1	3/8" Drill 3.5 amp 0-1000 rpm	198	109
0228-1	3/8" Drill 3.5 amp 0-1000 rpm	195	109
0375-1	3/8" close quarter Drill	237	129
0379-1	1/2" close quarter Drill	268	152
6546-1	cdls Scrwdvr 200 & 400 rpm	141	84
5399	1/2" D-hdle Hammer Drill Kit	332	194
6750-1	Drywall Gun 0-4000 5 amp	171	94
6507	Original SawZall with case	264	144
6977	Variable temp. Heat Gun	131	79
5397-1	3.8" var. spd Hammer Drill Kit	255	142
5371-1	1/2" var. spd Hammer Drill Kit	340	188
3107-1	1/2" v/spd right angle Drill Kit	399	219
6754-1	Drywall Gun 0-4000 5.4 amp	196	114
3300-1	1/2" var. spd right angle Drill	356	194
5680	Router 2 HP - 12 amp	362	198
0235-1	1/2" Drill w/keyless chuck	237	126
6142	4-1/2" Grinder w/case & access.	208	124
6749-1	Drywall Gun 0-2500 5.4 amp	218	128
6365	7-1/4" Circular Saw 13 amp	218	122
6366	6365 w/fence & carbide blade	228	129
6368	6365 w/fnce,carb. blde,& cse	249	139
6377	7-1/4" Worm Drive Saw	330	189
6256	Top Handle Jig Saw	264	148
6490	10" Mitre Saw	444	255
6491	**6490 w/ carbide blade & bag**	532	275

FREUD CARBIDE TIPPED SAW BLADES
5/8" Bore - Industrial Grade

Item	Description	Teeth	List	Sale
LU72M010	Gen Pur. A.T.B.	10" 40	69	39
LU82M010	Cut-off	10" 60	93	49
LU84M011	Comb	10" 50	78	42
LU85M010	Super Cut-off	10" 80	115	59
LM72M010	Ripping	10" 24	69	38
LU73M010	Cut off	10" 60	84	45
LU87M010	Thin Kerf	10" 24	72	39
LU88M010	Thin Kerf	10" 60	88	45
LU98M010	Ultimate	10" 80	128	68
LU91M010	Compnd Mitre	10" 60	88	54
F410	NEW Quiet Blade	10" 40	95	49
F810	NEW Quiet Blade	10" 80	135	74
TK303	7-1/4" Finishing	40	38	22
TK906	10" Combo	50	53	29
SD306	6" Dado - Carbide		215	112
SD308	8" Dado - Carbide		230	119
SD506	6" carbide w/case & shims		292	155
SD508	8" carbide w/case & shims		344	168
F0	1-3/4" x 5/8" Biscuit 1000 Qty		43	29
F10	2-1/8" x 3/4" Biscuit 1000 Qty		43	29
F20	2-3/4" x 1" Biscuit 1000 Qty		45	29
FA	Assorted Biscuits 1000 Qty		45	29
FB100	16 piece Forstner Bit Set		338	189
94-100	5 pc. Router Bit Door System		320	159
TR215	NEW 10" Slide Cmpd Mitre Saw		688	359
JS102	NEW Biscuit Jointer w/adj.fnc&cs		355	179

These FREUD Tools have a $30.00 Rebate !
Price shown is before rebate.

FT2000E	3-1/4 HP v/sp Plunge Router	410	205
JS100	Biscuit Jointer with case	334	164

MAKITA TOOLS

Model	Description	List	Sale
6070DW	3/8" v/spd Reverse Drill 7.2V	128	64
6172DWE	3/8" v/spd Drill Kit w/ 2 batt	220	109
5090DW	3-3/8" Saw Kit 9.6 volt	270	145
ML900	Incandescent Flashlight 9.6V	Sale	37
DA391DW	3/8" angle Drill Kit 9.6 volt	312	175
6012HDWE	2 speed Drill Kit w/2 batt.	243	135
6093DWE	6093DW Drill Kit w/2 batteries	270	139
6095DWE	**6095DW Drill Kit w/2 batteries**	330	139
6201DWE	NEW 9.6V Drill Kit w/2 batt.	298	158
6211DWE	12V Drill Kit with 2 batteries	330	169
632007-4	9.6 volt Battery	47	30
632002-4	7.2 volt Battery	39	28
5007NBA	7-1/4" Saw w/electric brake	263	135
5008NBA	8-1/4" Saw w/electric brake	346	195
B04510	1/4 sheet Pad Sander	106	59
9900B	3" x 21" Belt Sander w/bag	344	175
9924DB	3" x 24" Belt Sander w/bag	329	184
4301BV	Orb. var. spd Jig Saw 3.5A	292	158
JR3000V	var. speed Recip Saw w/case	252	135
LS1020	10" Mitre Saw 3.5 amp	630	355
9820-2	Blade Sharpener	394	205
N1900B	3-1/4" Planer with case	244	129
9514B	4" Disc Grinder 4.6 amp	111	59
B04550	1/4 sheet Pad Sander w/bag	98	52
DA3000R	3/8" Angle Drill	314	179
2708W	8-1/4" Table Saw	585	298
2711	10" Table Saw with brake	1067	565
6404	3/8" Drill Rev. 0-2100 rpm	112	58
6510LVR	3/8" Drill Rev. 0-1050 rpm	168	93
6820V	0-4000 rpm Drywall Gun	171	99
6013BR	1/2" Drill Rev. 6 amp	280	149
9401	4" x 24" Belt Sander w/bag	378	229
4302C	var. speed Orbital Jig Saw	351	199
5077B	7-1/4" Hypoid Saw	281	155
5007NB	7-1/4" Circular Saw 13 amp	232	124
5007NBK	5007NB Saw w/ plastic case	Sale	129
LS1011	**10" Slide Compound Saw**	946	509
3612BRA	3 HP Plungr Router w/ brake	524	175
LS1211	New 12" Slide Cmpd Saw	1550	865

SIOUX TOOLS

8030	New 3/8" var/spd Drill	250	145
8000	3/8" var/spd close qtr Drill	201	125
690	5" Air Random Orbit Sander	139	132

SENCO AIR NAILERS

SFN1	Finishing Nailer 1" - 2"	448	298
SN325	Nailer 1-7/8" - 3-1/4"	665	419
SLP20	New Pinner w/cse 5/8 -1-5/8"	399	269
SKS	Stapler 5/8" - 1-1/2"	390	269
SN70	Fram. Nailer Clip Hd 2"-3-1/2"	690	475
SN60	Fram. Nailer-Full Hd 2"-3-1/2"	638	445
SFN40	NEW Finish Nailer 1-1/4 - 2-1/2	571	385

BOSTITCH AIR NAILERS

N80S-1	Stick Nailer	Super Sale	348
RN45	Coil Roof Nailer 3/4 - 1-3/4	845	409
N60FN-2	Finishing Nailer	650	335
T31	Brad Nailer	281	145
CWC100	1 HP Pancake Compressor	463	289

SKIL SIZZLERS

77	7-1/4" Worm Drive Saw	257	144
77M	NEW 77 Mag Worm Saw	300	164
2735-04	12 volt cordless Drill Kit	249	144
2736-04	2735-04 with keyless chuck	269	145
1605-02	Biscuit Joiner w/case	221	129
3400	10" Table Saw - Bench Top	270	178

PANASONIC CORDLESS

EY6205EQK	Same as EY6205BC but comes with **Ironman** battery	368	192
EY6207BC	NEW 12 volt 1/2" Drill w/keyless chuck var. speed w/15 min. charger & case	420	222
EY6282EQK	Var. spd 9.6 volt Drill with 15 min. charger, case & NEW **Ironman** battery	315	169
EY62821DKW	9.6 volt Drill Kit w/2 batt.	395	162

NEW PREDATOR DRILLS

EY6181CRKW	NEW 9.6V Compact Drill Kit w/2 batt - 10% more pwr than EY62821DKW	305	158
EY6100CRKW	NEW 12 volt Drill Kit with 2 batteries, 1 hour charger, & case	358	185
EY6100CQKW	Same as **EY6100CRKW** but has 15 minute charger	420	198
EY6100EQK	NEW 12 volt Drill kit with NEW **Ironman** battery, 15 min. charger, & cse	375	199
EY6100EQKW	Same as **EY6100EQK** but w/2 **Ironman** batteries	473	225

PASLODE IMPULSE GUNS

IM250	Trimpulse Finish Nailer Kit	849	565
IM325	Impulse Framing Nailer Kit	849	565

WAGNER PAINT & SPRAYER PRODUCTS

230HD	Power Painter/Sprayer	100	84
255	Airless Kit	180	130
375E	Airless System	195	159
505	High performance Airless Painter	440	369
HVLP	Fine coat finishing HVLP System	195	155
CS2000	Pro fine finish HVLP System	339	269

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Airy Air Nailers

0241SK
Brad Nailer 3/8"-1 9/16"
Same as Senco SLP-20
List 180 Sale 98

0250SK
Brad Nailer 3/4"-2"
List 296 Sale 164

0626SK
1/4" Crown Stapler 3/8"-1"
List 194 Sale 104

0635SK
1/4" Crown Stapler 1/2"-1-3/8"
Same as Senco SKS
List 310 Sale 175

EZ-1
New Multi-purpose nailer & stapler
List 180 Sale 99

Above Nailers come w/case, fasteners, oil & wrenches

0565T
Angle Finish Nailer 1"-2-1/2"
List 386 Sale 205

DELTA
#34-080
10" MITRE BOX
XTRA SPECIAL
198.00

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AMERICA'S LOWEST PRICED TOOLS
FREE FREIGHT TO THE
48 CONTINENTAL STATES ON EVERY ITEM
PRICES SUBJECT TO CHANGE WITHOUT NOTICE

DEWALT TOOLS

Model	Description	List	Sale
DW364	7-1/4" Circ. Saw w/brake	285	154
DW945K-2	12V cdls Drill Kit w/2 batt	309	169
DW944K-2	9.6V cdls Drill Kit w/2 batt	283	165
DW610	1-1/2 HP 2 handle Router	274	149
DW411	1/4 sheet Palm Sander	97	58
DW100	3/8" Drill, 4 amp,0-2500 rpm	118	68
DW682K	**Biscuit Joiner with case**	429	219
DW705	12" Compound Mitre Saw	706	379
DW615	1-1/4 HP Elec. Plge Router	290	158
DW625	3 HP var. spd Plunge Router		269

DW625 Router comes with FREE
DW6966 Fine Depth Adjuster.

DW675K	3-1/8" Planer with case	289	164
DW431	3 x 21 v/spd Belt Sander	331	179
DW444	6" Ran Orb Sander-PSA pad	266	149
DW443	DW444 w/hook & loop pad	266	149

NEW DEWALT CORDLESS DRILLS

DW952K	3/8" v/spd w/one 9.6V batt	280	159
DW953K	3/8" v/spd w/one 12V batt	306	175
DW962K-2	3/8"v/sp w/two 9.6V XRbatt	324	179
DW972K-2	3/8"v/sp w/two 12V XRbatt	352	189
DW991K	3/8"v/sp w/one 14.4V XRbatt	370	199

Above drill kits come w/charger & steel case!

PORTA NAILER

401	Porta Nailer complete	265	205
501	Face Nailer complete	265	205

WERNER LADDERS

6205	5' Fiberglass	199	75
6206	6' Fiberglass	225	82

HITACHI TOOLS

P12R	12-9/32" Planer	1470	789
P12RA	Planer/Joiner	1940	989
C8FB	8-1/2" Slide Compound Saw	1400	599
G12SA	4-1/2" Grinder 6.9 amp	160	89
DS10DVAK	NEW 12V Cordless Drill Kit	393	199
NR83A	Fram Nailer 2 - 3-1/2 Full Head	700	395
NR83AA	Framing Nailer 2 - 3-1/2"	750	419
NT65A	16 ga. Brad Nailer 1 - 2-1/2	610	335
NV45AB	Coil Roofing Nailer 7/8 - 1-3/4	750	415
NV83A	Coil Nailer 2 - 3-1/4	750	419

BIESEMEYER FENCES

B-50	50" Commer. Saw Fence	345	298
T-SQUARE 52	52" Homeshop Fence	279	238
T-SQUARE 40	40" Homeshop Fence	259	208
T-SQUARE 28	28" Homeshop Fence	249	198

JORGENSEN ADJUSTABLE HANDSCREWS

Item#	Jaw Length	Open Cap	List	Sale	Box of 6
#0	8"	4-1/2"	19.76	11.75	58.00
#1	10"	6"	22.63	12.50	68.00
#2	12"	8-1/2"	25.95	14.50	78.00
#3	14"	10"	32.88	18.00	99.00

PONY CLAMP FIXTURES

Model		List	Sale	Lots of 12
50	3/4" Black Pipe Clamps	14.87	7.80	88.95
52	1/2" Black Pipe Clamps	12.40	6.70	71.50

BOSCH

Model	Description	List	Sale
1587VS	NEW Top Hand "CLIC" Jig Saw	292	149
1584VS	NEW Barrel "CLIC" Jig Saw	285	149
	Bosch Metal Case for above Jig Saws	34	32
	Bosch 30 blade assortment for Jig Saws		28.99

SUPER SPECIAL
1584VSK or 1587VSK with steel case and 30 Bosch blades ..... Sale 189

1942	Heat Gun 600° - 900°	125	78
1272D	3" x 24" Belt Sander with bag	375	204
1273D	4" x 24" Belt Sander with bag	380	215
11-212VSR	Bulldog 3/4"SDS Rtry Drill	390	209
1347AK	4-1/2" Grinder w/cs & access.	185	109
1348AE	5" Grinder 8.5 amp	225	129
1194VSR	1/2" var. speed Hammer Drill	282	149
1194VSRK	above Hammer Drill w/case	313	169
1608	5.6 amp Laminate Trimmer	168	95
1609K	Lam Installers Kit with 1609	343	184
1609KX	Deluxe Installers kit	405	228
1604A	1-3/4 HP 2 Handle Router	250	139
1604AK	same as above w/cse & acc	318	185
1606A	1-3/4 HP D-handle Router	295	179
3258K	3-1/4" Planer with steel case	273	169
3270DVS	3 x 21v/spd belt sander w/ bag	270	165
1273DVS	var. spd 4" x 24" Belt Sander	415	219
1614	1HP Plunge Router	245	149
1614EVS	1-1/4HP v/spd Plge Rtr	283	159
1613	1-3/4 HP Plunge Router	316	169
1613EVS	2HP v/sp Plunge Router	194	159
1615	3 HP, Plunge Router	430	259
1615EVS	3 HP v/spd Plge Router	505	278
1632VSRK	Recip Saw 8.4A orb-v/spd	225	154
3050VSRK	9.6V cdls v/sp Drill Kit comp	288	149
3051VSRK	3050VSRK w/keyless chuck	299	149
1370DEVS	6" Random Orbit Sander	427	224
3283DVS	5" Random Orbit Sander	169	98
3283DVSK	3283DVS Kit complete	199	118
B1650K	**NEW Biscuit Joiner**	289	155
B7000	NEW Corner Detail Sander	122	68
B4050	NEW In Line Jig Saw	199	119

AEG POWER TOOLS

Model	Description	List	Sale
TXE150	6" var/spd Ran Orb Sander	304	139
HBSE75S	3"x21" var/spd Belt Sander	309	175
BSPE100X	Top Handle Jig Saw w/case	286	155
FSPE100X	Barrel Grip Jig Saw w/case	274	155

BLACK & DECKER

1166	3/8" Drill 0-2500 rpm 4 amp	118	65
79-034	Workmate 400	181	109
2694	7-1/4" Super Sawcat w/case	285	152
2695	8-1/4" Super Sawscal w/case	328	162

DAVID WHITE

LP6-20	Sight Level package - 20x	310	195
LP6-20XL	LP6-20 w/9056 tripod & 7620 rod		259
LT8-300	Level Transit - 26x	695	445
LT8-300P	above Level w/optical plum	821	518
LT6-900	Level Transit - 20x	389	249
ALT6-900	Automatic Level - Transit -18x	638	409
ALTP6-900	above Level w/tripod & rod	708	469
ALP6-18H	Dabove Level w/tripod & rod	570	375
ML100I	NEW Laser Level	1099	945
ML100	NEW Laser Level w/detector	1249	1075

RYOBI SPECIALS

TS-254	10" Mitre Saw	440	209
RE600	3 HP Plunge Router	500	235
BE321	3" x 21" var. spd Belt Sander	310	139
TFD222VRK	12V cordless Drill Kit	365	155
TFF100	Flashlight uses 7.2,9 6,12v battery		19.95
BT3000	10" Table Saw with stand	1125	529
TSS220	8-1/2" Slide Comp Saw	968	445
DS1000	Detail Sander	90	44
AP12	12" Bench Planer	884	395
BS900	9" Bench Band Saw	340	169
OSS450	**Oscilating Spindle Sander**	340	159
ML618	NEW Mini Lathe var/spd	418	219
DC500	NEW Detail Carver	120	75

LAMELLO BISCUIT JOINTERS

TOP 10	"Simply the Best"	699	538
STANDARD 10	"Professionals Choice"	499	399

Msx636	FEIN Triangle Sander Kit	Sale	185
LPN672	PONY Air Palm Nailer w/glove	Sale	94.99

QUAL-CRAFT PRODUCTS

2200	Pump Jack	79	58
2201	Pump Jack Brace	30	20
2203	Pump Jack guard rail holder	31	21
2204	Workbench & rail holder combo	53	39

Buy any 6 (can be assort.) deduct 10%

2601	Wall Jack	167	108

Lots of 4 deduct additional 10%

PORTER CABLE

690	1-1/2 HP Router 8 amp	260	138
691	1-1/2 HP Router D-handle	285	155
695	1-1/2 HP Router/Shaper	400	223
696	HD Shaper Table	230	129
351	3" x 21" Belt Sander w/o bag	280	154
352	3" x 21" Belt Sander with bag	290	159
360	3" x 24" Belt Sander with bag	365	194
361	3" x 24" Belt Sander w/o bag	345	189
362	4" x 24" Belt Sander with bag	380	205
315-1	7-1/4" Top Hdle Circular Saw	225	118
97751	1/2" v/spd Hammer Drill w/cse	270	155
9118	Porta Plane Kit 7 amp	390	215
505	1/2 sheet Pad Sander	230	128
6611	3/8" var. speed Drill 5.2 amp	220	125
6614	1/2" var. speed Drill 0-750 rpm	230	128
6615	7514 with keyless chuck	230	128
7549	Top handle Jig Saw 4.8 amp	270	135
330	Speed Block Sander 1/4 sheet	110	60
555	Plate Biscuit Jointer with case	320	159
556	**555 jointer w/5556 tilt fence Sale**		165
345	6" Saw Boss 9 amp	190	104
9345	345 comp. w/cse & carb blde	220	124
9647	TIGER CUB Recip. Saw	210	119
9637	Full var/spd Recip Saw 8 amp	270	148
7519	3-1/4 HP Router 2 Handle	445	239
7518	3-1/4 HP 5 speed Router	510	268
7538	3-1/4 HP Plunge Router	445	239
7399	5.6 amp Drywall Cutout Unit	140	84
7310	5.6 amp Laminate Trimmer	165	95
97310	Laminate Trimmer Kit comp	360	198
7335	5" var. spd Rndm Orbit Sndr	245	132
7336	6" var. spd Rndm Orbit Sndr	250	137
73333	Dust Collection system	31	24.50
693	1-1/2 HP Plunge Router Base	320	174
6931	Plunge Router Base	125	77
7539	3-1/4HP v/spd Plunge Router	510	269
9852	12V 3/8"Drill w/cse 0-1000rpm	280	154
9853	9852 with keyless chuck	280	154
9855	12V 1/2" 2 spd,v/sp Drill w/cs	335	188
8500	12V battery for above drills	Sale	45

New Tools by Porter Cable

332	Palm Grip Rndm Orbit Sander	120	69
333	above Sander with dust bag	135	75
334	333 Sander with PSA pad	135	74
340	1/4 Sheet Orb Sndr w/dust p/u	89	55
352VS	3x21 Belt Sander w/bag v/spd	305	169
7116	24" Omni Jig	535	294
550	Pocket cutter with case	330	179
310	Production Laminate Trimmer	250	145
7700	10" "Lazerloc" Mitre Saw	634	344
347	7-1/4" "Framers" Circ Saw	225	129
743	347 Saw - left hand version	225	129
9743	NEW 743 Saw with case	255	148
9347	NEW 347 Saw with case	255	148
447	**347 Saw with brake**	245	134
843	447 Saw-left hand version	245	139

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FINISHING TOUCHES

Mesquite has the beauty of walnut with exquisite figure, as displayed in this bust called "Comanche" by Texas carver Charlie Boren, of Burleson.

Mesquite goes to market

Once just a thorn in ranchers' sides, the scrawny mesquite of Texas has come a long way from the days when it was yanked from grazing land and burned as an agricultural pest. Now the beautiful wood even has a fan club: *Los Amigos del Mesquite* (Friends of the Mesquite). And the Texas Forest Service thinks enough of the wood as woodworking stock that it has published a directory of mesquite suppliers so that woodworkers outside the Lone Star State can sample some. The directory also includes the names of over 200 artisans who work in mesquite. For a copy, send $2.50 (U.S.) to: *Mesquite Directory, Texas Forest Products Laboratory, P.O. Box 310, Lufkin, TX 75901.*

The foremost tree

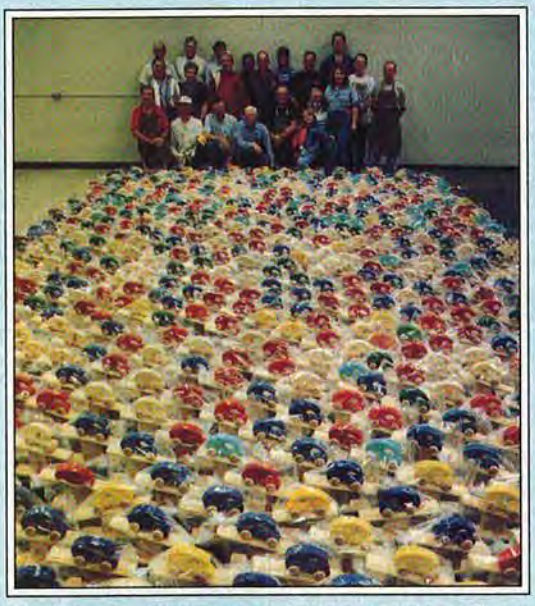
The Douglas fir (*Pseudotsuga menziesii*) ranks as North America's most plentiful tree species, according to the Western Wood Products Association. It represents over one-fifth of the continent's total softwood reserves.

TWO TALES OF TOYS

At *WOOD*® magazine, we receive lots of mail from clubs telling us what they're up to. We can't publish all the news, but we found the following toy-related club activity stories quite interesting.

From San Antonio, Texas: Jerry DeGroot, president of the San Antonio Woodworkers Guild, wrote a letter describing his group's project for Christmas 1993. It seems that the guild's members, along with students from Clark High School, managed to build 865 wooden carts and ramps (see photo *below*) for their city's less-fortunate children.

"We do a project of this nature every Christmas," wrote Jerry. "It produces an esprit de corps among the club members and also serves as a schooling for all the new woodworkers."



Members of the San Antonio Woodworkers Guild and Clark High School students proudly display just some of their toy production.

Installed in area shopping malls to benefit the Marine Reserve's Toys for Tots program, these 4×4×7' toy-collection bins were built by the San Joaquin Fine Woodworkers Association.

From Visalia, California: Out in the Golden State's great San Joaquin Valley, there's a four-county woodworking club that gears up every year to help the area's children. Last year, in addition to building toys, they did a good deed for the U.S. Marine Corps Reserve's annual Toys for Tots program.

According to Sherryn McNab, president of the San Joaquin Fine Woodworkers Association, the local Marines needed collection bins for their toy program. Installed in area malls, the bins would serve as receptacles for donated toys. Nine club members volunteered for the project. They completed the bins last October, after spending close to 300 hours in their construction.

"This year, I'm asking each of our members [about 150] to build a minimum of three toys, with one being an original," says Sherryn. "We'll submit the best example from the club to *WOOD* magazine's Build-A-Toy® contest to compete for an award, and give the rest to needy kids."

Good job, Jerry and Sherryn. Thanks for sharing your stories with us.

A historical perspective on redwoods

Many redwood trees live to be over 2,000 years old. These trees are now protected in national and state parks. They were seedlings during Alexander the Great's world conquest in 336 B.C., middle-aged adults during the crusades in 1147, and senior citizens when Columbus discovered America in 1492.

Photographs: Ken E. Rogers; San Antonio Woodworkers Guild; San Joaquin Fine Woodworkers Assoc.

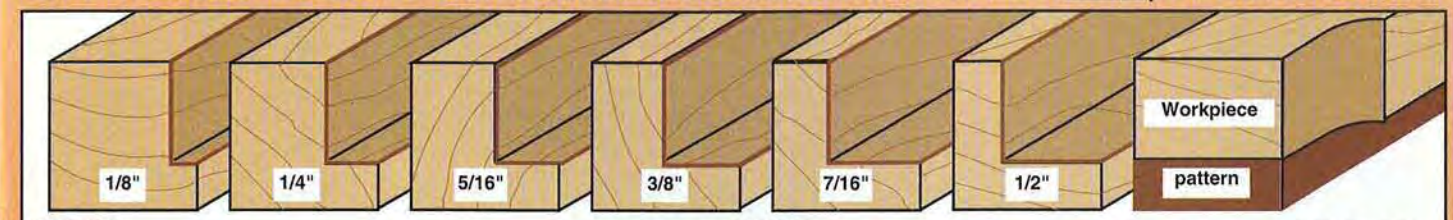
CMT's Rabbet-Master Plus

One Rabbeting bit makes you the master of seven different cuts at one low price!

CMT has done it again! Once again we're giving you more for your money by producing a set that gives you more work from our bits. Our "old" Rabbet-Master Kit is one of the most popular sets we've ever introduced, now we've gone one better with the new, expanded Rabbet-Master Plus™. Not only can you cut just about any rabbet you'll ever need, but you can flush trim as well. The set includes one of our 1-3/8"-diameter carbide tipped rabbeting bits and seven ball bearings. Cut rabbets from 1/8" to 1/2" deep and flush trim as well! The Rabbet-Master Plus™ also includes an allen key for bearing changes. If you're one of thousands of wood-workers who already have a six-bearing Rabbet-Master in your shop, ask us about our economical upgrade kit.

The color orange on router bits is a registered trademark of CMT Tools

Our Rabbet-Master Plus makes all these rabbets . . . *Plus*, it flush trims!



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1/4" Shank Rabbet-Master Plus, List: $61.80 **Sale: $36.90**

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1/2" Shank Rabbet-Master Plus, List: $65.80 **Sale: $39.90**

Joint-Master Dado Set

Features our 3/32" Ply-Groove Chipper - perfect for undersized plywood!

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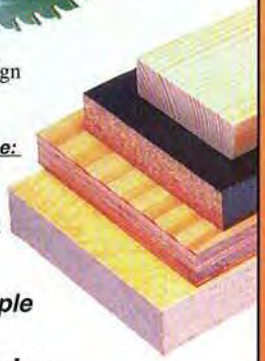
108-240X 8" Joint Master Dado Set
With free Dado Shim Set
List: $239.40 **SALE: $179.00**

CMT's Two-blade Sets

Here's a great way to save on the world's finest carbide tipped blades!

- Carbide teeth
- Anti-kickback design
- Unique sound suppression slots

Look at the evidence:
Actual cuts in four difficult materials:



Our catalog has nine 2-blade sets, all at big savings!

Here are a couple of samples:

110-222 Includes:
10" 50-tooth Combination Blade
10" 80-tooth Laminate Blade
List: $153.00 **SALE: $114.80**

110-225 Includes:
10" 60-tooth General Purpose Blade
10" 80-tooth Laminate Blade
List: $153.00 **SALE: $114.80**

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- CENTER-MOUNTED CAST IRON FENCE W/TABLE SLIDE PROTECTOR
- MICRO-ADJUSTMENT HAND CRANK FOR OUTFEED TABLE
- STURDY BASE CABINET W/DUST COLLECTOR CHUTE

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LOW PRICE:
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- 1 1/2 H.P., 220V, SINGLE PHASE MOTOR
- CENTER-MOUNTED CAST IRON FENCE W/TABLE SLIDE PROTECTOR
- MICRO-ADJUSTMENT HAND CRANK FOR OUTFEED TABLE
- MAGNETIC SAFETY SWITCH
- 65" LONG CAST IRON BED

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- PRECISION SINGLE LEVER RIP FENCE W/MICRO-ADJUSTMENT

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- 16,000 C.P.M.
- 2-KNIFE CUTTERHEAD

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- PRECISION GROUND CAST IRON TABLE
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- 1/2" & 3/4" SPINDLES
- CAST IRON TABLE
- OPTIONAL DUST HOOD

***EN3302**
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3 H.P. HEAVY DUTY WOOD SHAPER

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- 1/2", 3/4" & 1" SPINDLES
- CAST IRON TABLE
- OPTIONAL DUST HOOD

***EN3303**
REG.: $785.00
SPECIAL:
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3 H.P. SLIDING TABLE WOOD SHAPER
- 220V, 7,000/10,000 R.P.M.
- 24" X 9" SLIDING TABLE
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- OPTIONAL DUST HOOD

***EN3304**
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- MITER GAUGE
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- 6" X 80" BELT
- QUICK RELEASE LEVER
- CAST IRON TABLE
- MAGNETIC SWITCH IS OPTIONAL

***EN3405**
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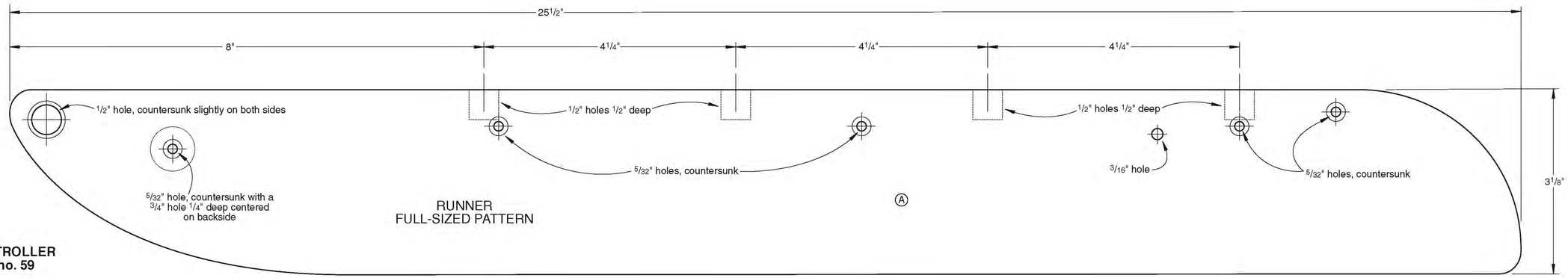

RUNNER
FULL-SIZED PATTERN

Ⓐ

SNOW STROLLER
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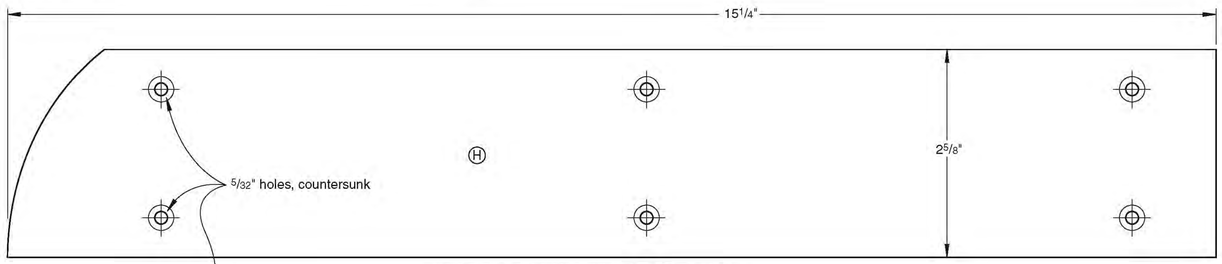
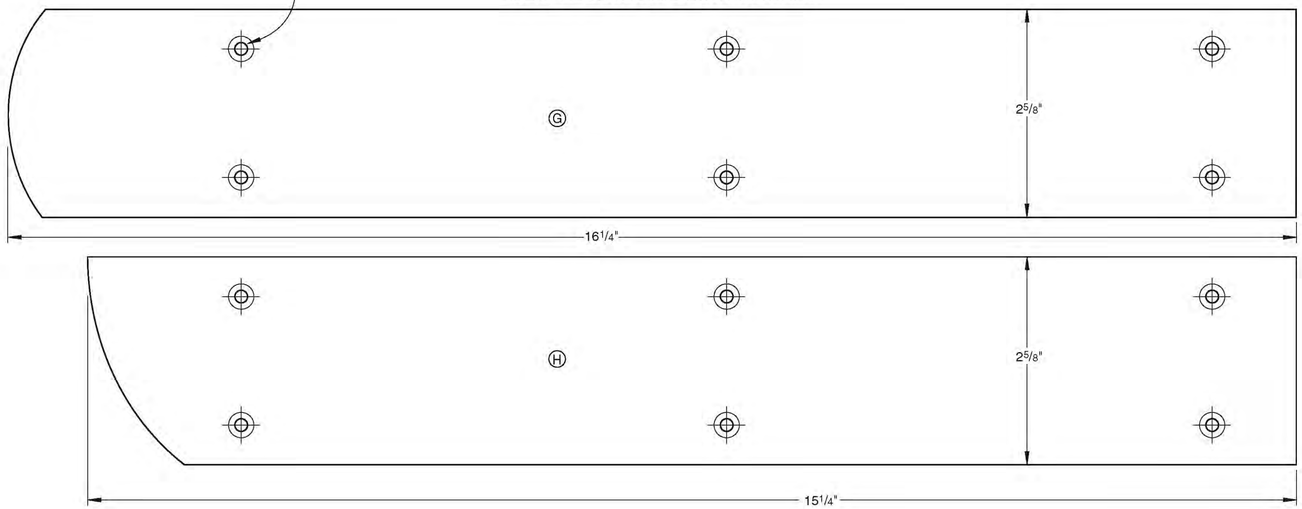
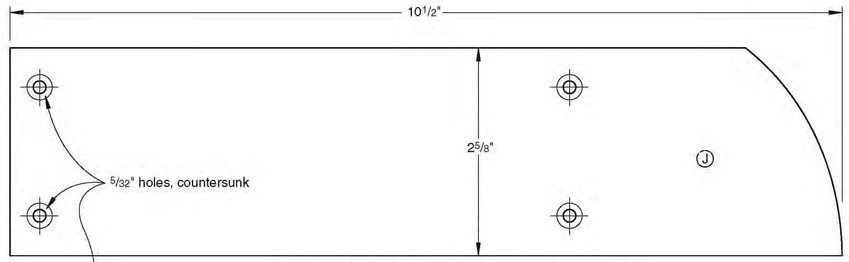
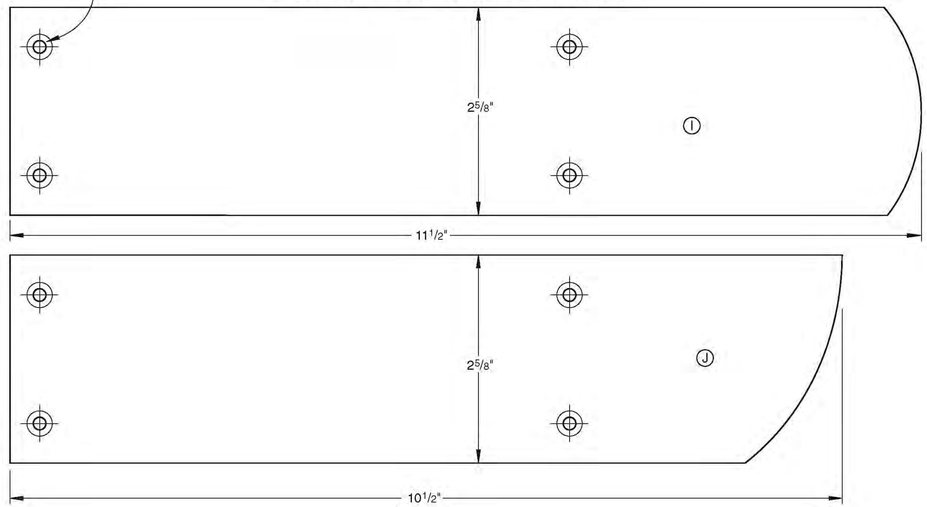


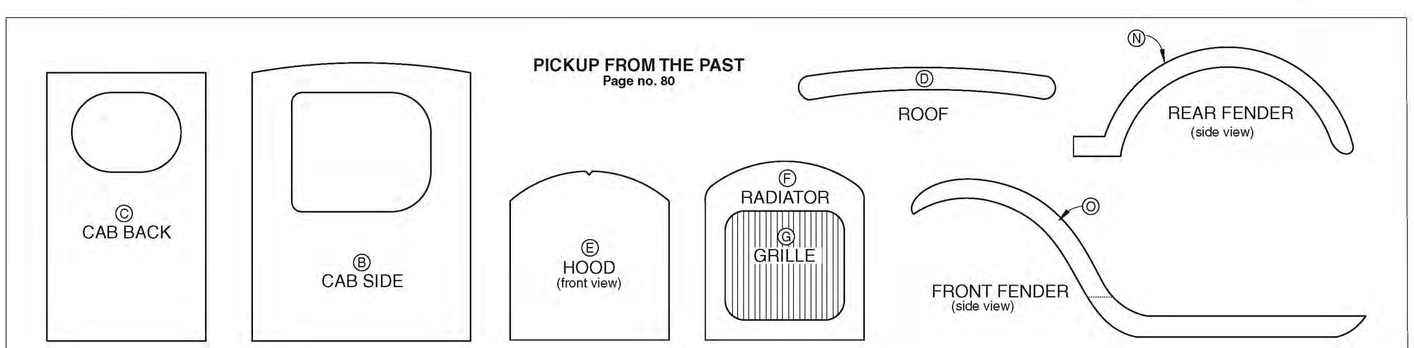
SEAT SLATS FULL-SIZED PATTERNS

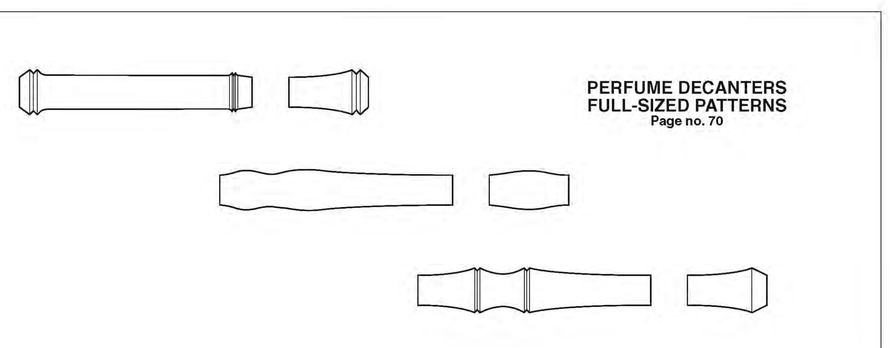


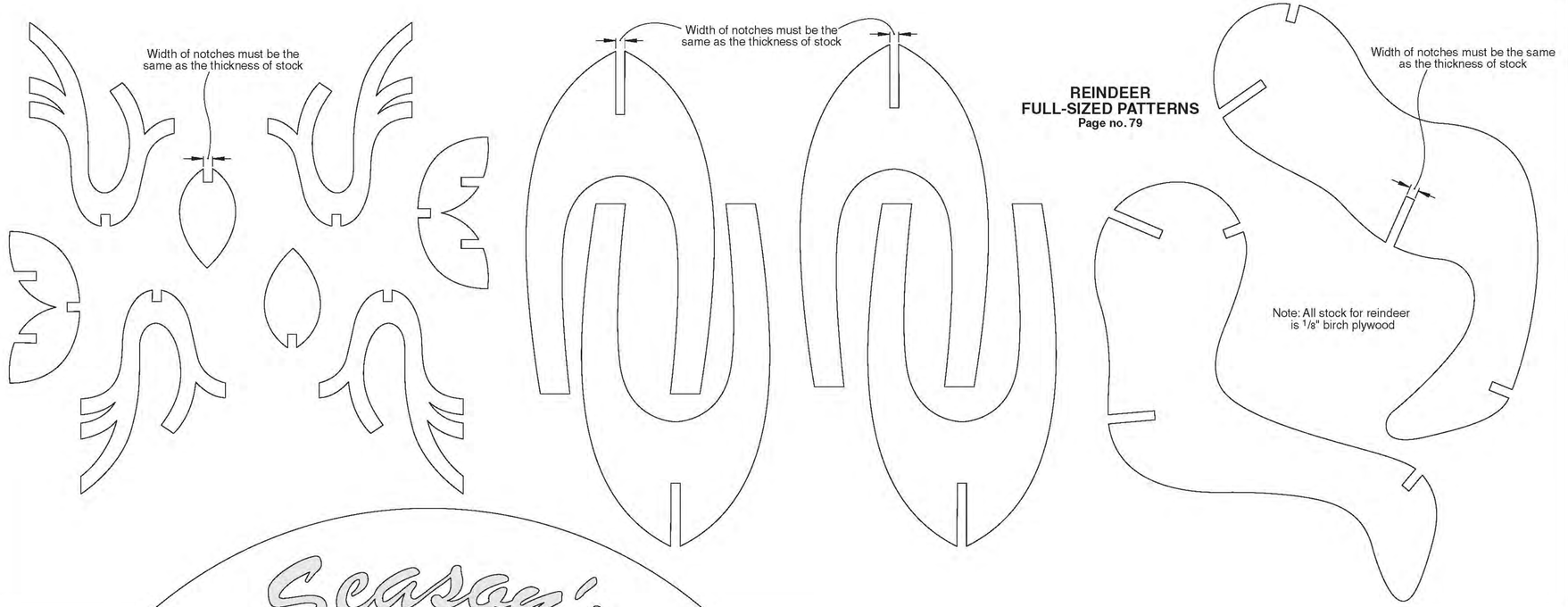


BACKREST SLATS FULL-SIZED PATTERNS








Width of notches must be the same as the thickness of stock
Width of notches must be the same as the thickness of stock
Width of notches must be the same as the thickness of stock
Note: All stock for reindeer is 1/8" birch plywood

REINDEER
FULL-SIZED PATTERNS
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CARVED PLATE
FULL-SIZED
PATTERN
Page no. 68

Better Homes and Gardens®

WOOD® PATTERNS™

Full-sized for your woodworking convenience

NOVEMBER 1994 **ISSUE 74**

Dear Reader: As a service to you, we've included full-sized patterns on this insert for irregular-shaped and intricate project parts. You can machine all other project parts using the Bill of Materials and the drawings accompanying the project you're building.

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- **Classic corner cabinet**
- **Perfume applicator**
- **Christmas reindeer**
- **Snow stroller**
- **Scrollsawn plate**
- **Painted pickup**

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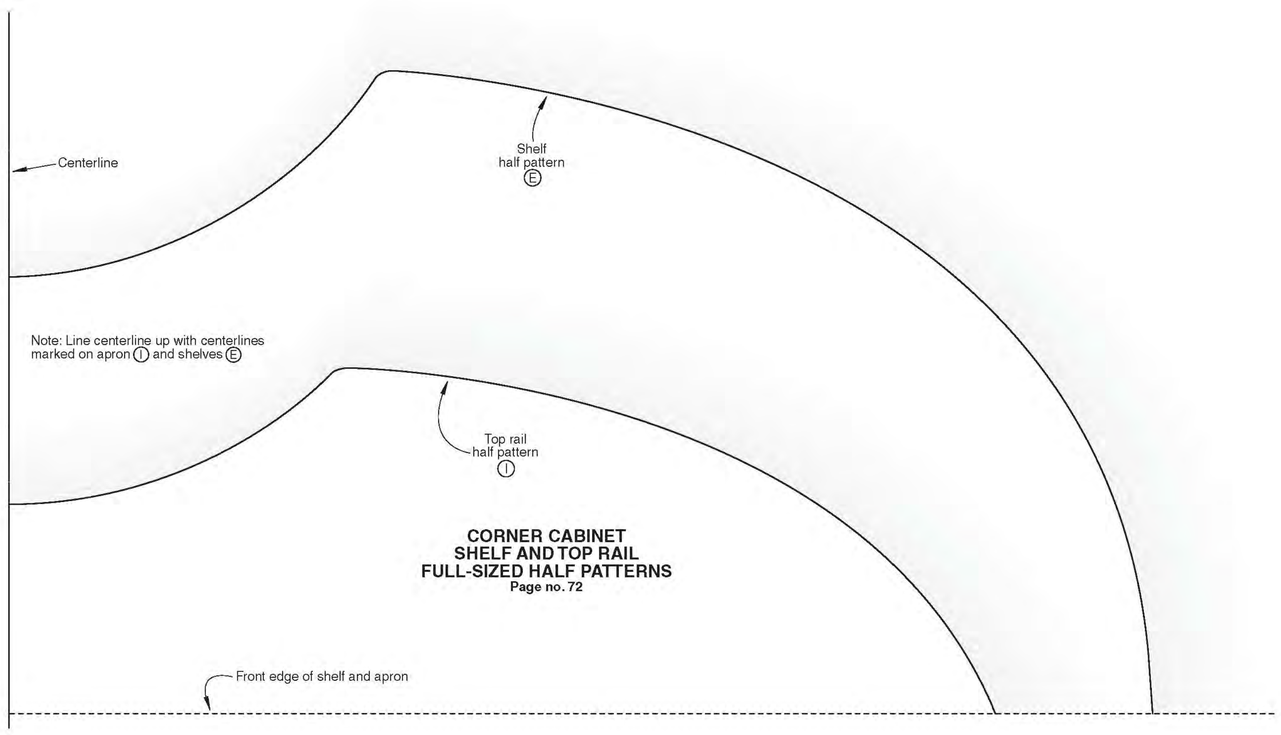

CORNER CABINET
SHELF AND TOP RAIL
FULL-SIZED HALF PATTERNS
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